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Towards an Effective Design of the Business Intelligence & Analytics Function within an Organisation

by
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ABSTRACT

Towards an Effective Design of the Business Intelligence & Analytics Function within an Organisation

Eric Sandosham

This dissertation is about the organisational considerations in setting up a successful business intelligence and analytics (BI&A) function. It addresses a gap in academic literature by presenting a theoretical framework on organisational attributes that impacts the BI&A function's ability to improve the completeness and relevance of their data-driven solutions.

BI&A is a subset of information processing, and as such, subject to the phenomenon of uncertainty and equivocality. Most BI&A functions do not explicitly address this phenomenon in their organisation design, leading to sub-optimal BI&A outcomes as widely publicised in both academic and practice literature.

This dissertation contributes to theory by identifying the organisation design variables that moderate the effects of a BI&A function's ability to deal with uncertainty and equivocality in problem-solving. The research led to a proposed 'transmutation' framework where BI&A practitioners translate a business problem

into a business solution that is key to understanding the role these moderating variables play.

This proposed transmutation framework has practical implications to the emerging discipline of BI&A. It provides insights into the interface model between the BI&A function and its business stakeholders, the specialisation of roles and responsibilities within the BI&A function, and the benefits and dis-benefits of pursuing a distributed organisational model such as offshoring.

Insights for this dissertation were drawn from 25 in-depth interviews with BI&A leaders and practitioners, and their senior business stakeholders.

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ACKNOWLEDGEMENT

1. Introduction – A History of Analytics

In 2007, Tom Davenport and Jeanne Harris released their book "Competing on Analytics: The New Science of Winning" and ignited a fire of global interest in a phenomenon called 'Business Intelligence & Analytics' (BI&A). In it, the authors argued how organisations could benefit by putting mathematical, statistical and data management expertise as a core pillar of their business strategy, investing in it as a core competency to significantly improve their business performance. In truth, the idea of leveraging data to improve business performance isn't new. In the 1980's, Zuboff (1985) argued that Information Technology (IT) processes could generate useful data that could be leveraged for insights about business processes, leading to improved business innovation and performance, and thereby create business competitive advantage. Other early authors such as Fayyad et al. (1996) and Sasisekharan et al. (1996) have also described the value of extracting useful knowledge from business operations data through data-mining techniques to improve business performances. However, the confluence of increased data availability and variety, increasingly sophisticated analytical tools, and a proliferation of analytically-minded human resource talent has brought the practice of BI&A to the fore, making it the torch-bearer for the business intelligence industry, which is estimated to grow from USD 13.8 billion in 2013 to a projected USD 17.1 billion by 2016 (Gartner report, February 2013).

Despite the numerous examples of how BI&A has been successfully deployed to solve a variety of business challenges, like how Netflix, the US video rental and

online video streaming company, grew from a US$5 million company in 1999 to a staggering US$1 billion company by 2006 by leveraging analytics to understand consumer behaviour and preferences to better design and price their products for maximum returns (Davenport and Harris, 2007), very little has been researched and actually written about how BI&A influences the decision-making, resource allocation, governance, search and select, and asset orchestration capabilities processes within an organisation that eventually leads to incremental business value. A 2014 article in the European Journal of Information Systems (Sharma et al, 2014) underscores the gap in research to understand BI&A's influence on organisational decision-making and business performance, such as "How does the use of business analytics influence organisational decision-making processes?" or "How is the use of business analytics influenced by organisational decision-making processes?"

What does it mean to build BI&A as a 'core competency'? Core competency can be operationally understood as a systematic and hierarchical build-up of resources, capabilities, and competencies (Javidan, 1998). Resources includes but not limited to manpower, IT systems and organisational culture. Capabilities consist of business processes that describes and manages the interactions of resources; capabilities are functionally defined. Competency is defined as a cross-functional integration of capabilities. And so clearly, how the BI&A function is organised is a critical consideration.

As a long-time practitioner of BI&A in the financial industry, and as someone who has led the development of BI&A teams across several countries, these broad research questions resonate with me. Ultimately, BI&A is about improving the decision-making capabilities within an organisation, and yet, the organisational aspect seems to be largely neglected in the literature coverage. I am therefore keenly interested in the development a theory that can guide the effective design, set-up and implementation of the BI&A function within an organisation.

2. Literature Review

2.1. Business Intelligence & Analytics Defined

The idea of leveraging data to improve business performance isn't new. The application of mathematical and statistical techniques to solve business problems has a long history under such disciplines as operations research/management science, econometrics, financial analysis. Operations research made its debut during WWII as a concept to optimise military operations. After the war, the transfusion of this movement into the corporate world became known as management science.

In 1958, H.P. Luhn coined the term 'business intelligence' (BI) in an IBM journal article called "A Business Intelligence System". The term remained fairly obscure until 1989 when Howard Dressner, a research fellow at the Gartner Group, used it as an "umbrella term to describe concepts and methods to improve business decision-making by using fact-based support" (Negash and Gray 2008). While early references to BI focused on operational excellence and hindsight information such as database management, reporting and data queries, the practice soon evolved into leveraging statistical and mathematical models to predict the behaviour of underlying business drivers (e.g. consumer purchase preferences for retail-oriented businesses), and optimising business outcomes (Davenport 2006, Sharma et al 2010, Chen at al 2012).

The literature sometimes uses the terms 'Business Intelligence', 'Business Analytics' or just 'Analytics'. For example, the technology vendor SAS

(Statistical Analysis System) uses the term 'Business Analytics' to differentiate the statistical and predictive analytics aspects of the domain, reserving the 'Business Intelligence' term for the information technology aspects. From the reading of the popular literature by domain practitioners, these two terms are often used interchangeably. Additionally, the use of the term 'Big Data' (characterised by data *volume* expressed in terabytes and beyond, *velocity* at which data is generated, and the *variety* of data including unstructured data, and sophisticated machine-learning algorithms to discover new patterns that may lead to significantly impactful insights) has emerged as a current trend in this domain.

Within the academic literature, a formal definition of BI&A is still elusive. Holsapple et al (2014) state that there has been "relatively little introspective investigation of business analytics as a field of study" by the academic community. Holsapple et al (2014) puts forward a 6-class taxonomy covering "business analytics perspectives" in the academic literature. Table 1 below summarises this taxonomy.

Table 1: 6-class taxonomy on BI&A perspectives

Class	Definition
Movement	"It involves a mind-set in which evidence-based problem recognition and solving governs an entity's strategies, operations, and tactics."
Collection of Practice & Technologies	"It includes an organisation's acquisition, assimilation, selection, generation, and emission of knowledge (i.e., evidence, in the present context) in the face of various managerial, resource, and environmental influences."
Transformation Process	"Evidence is transformed via some process into insight or action. In this perspective, the focus is on the process that drives, coordinates, controls, and measures the transformation."
Capability Set	"These are competencies possessed by an organisation and its processors. They determine what can be done in the way of evidence-based problem recognition and solving."
Specific Activities	"BA is seen as being a set of specific activity types for operating on available evidence, rather than being a set of broad competencies. These four activities are accessing, examining, aggregating, and analysing evidence."
Decisional Paradigm	"An approach to decision making – distinct from other approaches, such as naturalistic decision making – or is perceived as part of decision making."

Chen et al (2012) describes the term 'Business Intelligence and Analytics' (BI&A), as the collection of "techniques, technologies, systems, practices, methodologies, and applications that analyse critical business data to help an enterprise better understand its business and market and make timely business decisions." In essence, the practice of BI&A transforms data into insights into actions (Sharma et al 2014). For the purpose of this dissertation, I will use the collective term of 'Business Intelligence and Analytics' to encapsulate all of the above definitions and perspectives.

2.2.   Objectives of Business Intelligence & Analytics

"Why do organisations engage in Business Intelligence & Analytics (BI&A) activities?". They do so to improve the speed and quality of decisions by reducing uncertainty and equivocality through the use of data-driven solutions and insights. As Tushman and Nadler (1978) highlighted: "different organisational structures have different capacities for effective information processing," and thus, by consolidating and formally organising the BI&A activities into a well-defined function, an organisation would increase its information processing capabilities.

The goal of BI&A is to enable organisations to make better business decisions to improve business performance (Davenport 2007, Cooper 2012). These improvements in business decisions could be in the areas of strategy and business development, financial management and budgeting, sales and marketing, customer service, operations and production, brand management, human capital management (Lavalle et al 2013) and can be expressed in terms of the *speed of decision-making* and *quality of decisions*. Therefore, a company can be said to be successful at implementing BI&A if it is able to significantly improve the speed and quality of its decision-making capabilities, and apply it to realise business performance gains.

2.2.1. Ambiguity, Equivocality and Uncertainty

Before I further expound on the speed of decision-making and quality of decisions, it is important first to shed some light on the 'nature' of problems and problem-solving. The notion of ambiguity, equivocality and uncertainty are central themes in problem framing and problem solving. They are not often recognised as separate and distinct aspects (Schrader et al. 1993).

Ambiguity is often confused with equivocality. Equivocality refers to multiple, and possibly conflicting, interpretations of the same thing. On the other hand, ambiguity represents an inability to interpret or make sense of something (Zack 2007). Uncertainty represents a lack of sufficient information to describe a current state or to predict a future state (Zack 2007). Stated more simply ambiguity is the inability to make sense of something, while equivocality is the ability to make sense of something but different interpretations may exist, uncertainty is a lack of sufficient data to answer a query.

There is a natural hierarchy at play here. Ambiguity leads to equivocality because in the presence of such an interpretative void, "multiple competing interpretations and hypotheses will be surfaced, resulting in equivocality." (Zack 2007). Narrowing of these multiple interpretations and hypotheses lead to a convergence of the problem statement, with only uncertainty remaining.

To illustrate the difference between ambiguity, equivocality and uncertainty, let's consider a hypothetical situation where a domestic company is seeking to expand

its footprint regionally. The company engages a business consultancy for advice and assistance. The consultant seeks clarification as to what the company is looking to achieve with its expansion plans. Things are pretty ***ambiguous*** at this stage as the company's management struggles to articulate clear objectives for its expansionary desires. Management soon converge on twin objectives – they wish to expand into markets with significant growth opportunities and acceptable risks. While the expansionary objectives been clarified, it was still not clear to the consultant as to the explicit definitions of growth and risk. Do you define growth as compound annual CAGR (Compound Average Growth Rate) growth rate over the next 5 years? Or perhaps market sales potential over the next 3 years? And similarly, how should risk be defined? Should it be the forecasted number of competitors over the next 10 years? Should it be the expected tightening of industry regulations and its impact over the next 2 years? Things have clearly moved from a state of ***ambiguity*** to a state of ***equivocality***. The consultant now pushes the company's management team further to clarify and converge on their definitions of growth and risk. Once convergence is attained, the consultant now focuses on how best to go about collecting or "proxying" the data for the agreed definition of growth and risk. The problem now reduces to a state of ***uncertainty***.

2.2.2. Speed of Decision-Making

At its core, BI&A is a data-centric approach to improving decision-making within an organisation. It can be expressed through the 'process journey' of transforming

data into information, into knowledge, and onwards into action and the resulting business impact (see Figure 1) (Golfarelli et al. 2004).

According to Russell L. Ackoff (1989), the eminent systems and organisational theorist, "data are symbols that represent properties of objects, events and their environments. They are products of observation." Information, on the other hand, is data that has been given context and has therefore acquired meaning to the recipient (Davis and Olson, 1985). Knowledge is information with connection and consequence; it has usefulness (Wallace 2007). Knowledge requires cognitive and analytical abilities.

Figure 1: Data to Business Impact Process

Decision-making occurs at the intersection of 'Knowledge' and 'Action'. The speed at which knowledge is produced is therefore correlated with the speed of decision-making. The speed at which knowledge is produced is dependent on the type of data that the BI&A function has access to, how quickly it can access it, its ability to contextualise it (i.e. interpret it) into information, and its ability to see the practical and constructive use of that information to impact business outcomes. In the 'transmutation' process of obtaining data and turning it into knowledge, the BI&A function may employ such methodologies as data querying

or data mining, statistical segmentation, correlation and predictive analytics. Therefore, the level of technical competencies within the BI&A function would clearly impact the speed at which information is produced, and in turn, the speed of decision-making. Beyond the access to data and technical competencies, the ability of the BI&A function to 'mechanise' or 'routinise' the 'transmutation' process would be another critical factor to enabling faster decision-making.

2.2.3. Quality of Decision-Making

The quality of decision making is impacted by the quality of data, information and knowledge. Technical skills in statistical and predictive analytics is important as these skills are utilised to create new data based on historic data. The better the skills, the better the accuracy and quality of the newly created data. Assuming data to be correct and accurate, the quality of information is dependent on the contextual interpretation – if the context is not well-understood or mis-understood, then information can become unreliable or incomplete or irrelevant. Assuming information is well-interpreted, it does not mean that it is useful, which is the key definitional attribute for knowledge – knowledge answers the 'how' and 'why'. In summary, quality of decision-making is wrapped up with new data creation, context, interpretation and connection.

2.3. Organising the BI&A Function

Given the objective of engaging in BI&A activities is to improve the speed and quality of decision-making, how does one then go about organising the activities

into a formal function? Academic literature on the subject of organising BI&A is scant. Nonetheless, there is some amount of published resources from practitioners on the subject matter. A construct that has gained popularity is the Business Intelligence Competency Centre (BICC). First suggested by Gartner in its 2002 report (Dresner et al), and further elaborated in the 2006 Gartner publication (Burton et al), the BICC construct is well-known within the analytics community.

"A BICC is a cross-functional team with a permanent, formal organisational structure. It has defined tasks, roles, responsibilities, and processes for supporting and promoting the effective use of BI across an organisation." (Miller et al, 2006, pg. 9). The definition of BI here includes BI&A activities. The construct of the BICC recognises that BI&A is very much a process, and not just about analytical techniques and tools, and hence the explicit need for a formal organisational construct to bring together business domain knowledge, statistical and analytical skills, and data management and IT skills. Figure 2 summarises the organisational charter and competencies of the BICC (Hostmann 2007).

Burton et al (2006) notes that there is no "best" solution in terms of where the BICC should report into. It could report into Chief Technology Officer, the Chief Information Officer, the Chief Financial Officer or the Chief Operating Officer. The requirement is that BICC should report into a division that has strategic and enterprise influence.
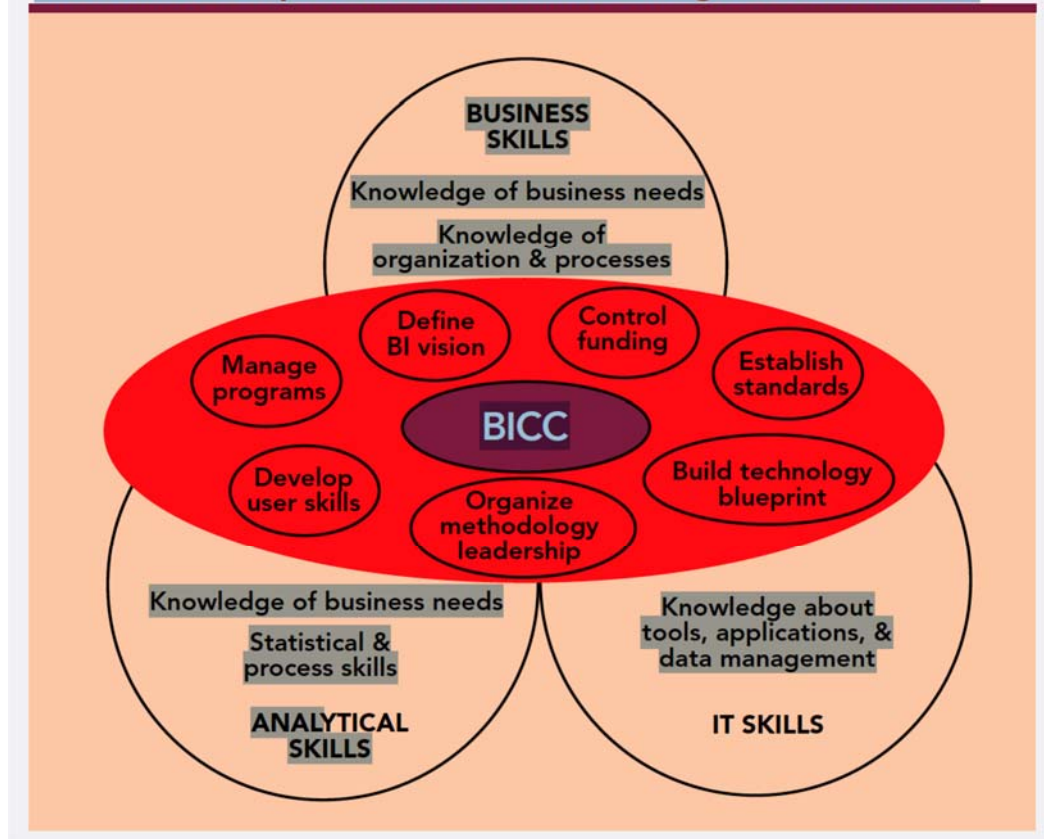
Figure 2: Overview of BICC Design and Competencies

Reading the practice and vendor literature, one notes that putting together a BICC can be fraught with a variety of challenges as well. Alt-Simmons (2011), the Business Transformation Lead for customer analytics at SAS Institute, notes in her blog that BICC and Business Analytics Centres of Excellence have even developed a poor reputation of delivering business value at some organisations, citing a bias for governance instead of problem-solving as a leading cause. In fact, the charter of the BICC shares much similarity to an IT Program Management Office set-up (Earl 2012); the analogous comparison to problem-solving would reside with the IT Development team.It is important to note that the BICC construct is but one suggestion to building a formal BI&A function. There is much parallel that can be drawn with the organisational design of a marketing function, which too has strong elements of information processing, decision-making and cross-functional interfaces. Marketing authors have argued the

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benefits and shortcomings of various organisational forms ranging from traditional (Weitz and Anderson 1981) to contingency approaches (Ruekert et al. 1985). However, from the perspective of structure and performance, three themes arise – centralisation, formalisation, and specialisation (Dalton et al. 1980). Centralisation deals with the locus of authority and decision-making (Pugh et al. 1968). Formalisation represents the degree to which interactions between two functional areas are governed by rules or standard operating procedures (Workman et al. 1998). Specialisation reflects the full-time performance of an activity that is not performed by anyone else in the chain of command (Pugh et al. 1968). Although empirical evidence has been mixed, it is believed that centralisation leads to greater effectiveness, formalisation leads to greater efficiency, and specialisation leads to greater adaptability (Hage 1965, Pugh et al. 1968).

Based along these lines, one can see that the arguments for a BICC are founded on centralisation, formalisation and specialisation.

2.4. Information Processing

The fundamental premise of this dissertation is that any formal organisation construct of the BI&A function must increase the organisation's information processing capabilities through uncertainty and equivocality reduction, and that in turn leads to improvements in the speed and quality of decision-making leading to improvements in business outcomes.

Other than the BICC construct, both the academic and practitioner literature is scant on alternative BI&A organisation designs. I posit the use of information processing theories as foundational principles in the development of an optimal BI&A organisation construct.

Organisations are essentially information processing systems (Daft & Lengel 1983). Therefore, organising the BI&A function can be viewed in terms of information processing capability. Galbraith (1973), Weick & Keisler (1979), and Daft & Lengel (1986) proposed the reason that "organisations process information" is to reduce uncertainty and equivocality (i.e. ambiguity). Uncertainty is reduced through the acquisition of more information, while equivocality is reduced through integration of different types of information and different perspectives of interpretation; a clear distinction between information richness ("defined as the ability of information to change understanding within a certain time interval" (Daft & Lengel 1986, Zack 2007)) versus amount of information.

To illustrate, consider the example of credit underwriting in the consumer-banking domain. The objective is to minimise losses (due to repayment delinquency) and this can be continuously improved by gathering more accurate and timely data about the borrower's repayment capacity. The use of advance statistical modelling techniques can then be used to transform that data into increasingly more accurate predictions of a borrower's long-term repayment behaviour. Improving the credit

underwriting process is very much about solving an uncertain problem. Conversely, consider the case when Bank A launches a new digital banking service and the CEO of Bank B wonders if and how to react. To answer this question, a variety of data and perspectives will be needed to better understand the core concerns and potential impact from this new capability from Bank A. This would be an example of an equivocal problem.

Now, despite the significant investments in BI&A that many organisations have made, both in terms of infrastructure and talent resources, we have yet to see wide-ranging success in terms of business outcomes (Banerjee et al. 2013, Brown et al. 2013). This is because most BI&A functions are organised to solve uncertain problems (i.e. the procurement and transformation of data), while neglecting to consider the equivocal nature of business problems. Daft and Lengel (1986) argue that if not addressed, equivocality will induce more uncertainty, and as such, equivocality should be reduced beforehand (Zack 2007). For a successful implementation of a BI&A function, it is therefore imperative that organisational and structural mechanisms be put in place to increase the function's capability to address equivocal problems.

Daft and Lengel (1984, 1986) argued that equivocal problems require structural mechanisms to facilitate the processing of rich information, while uncertain problems require structural mechanisms that can facilitate large amounts of information. Examples of structural mechanisms that can facilitate rich information are "group meetings". Examples of structural mechanisms that can

facilitate a large amount of information are "rules and regulations". Daft and Lengel (1986) propose a continuum of structural mechanisms to deal with the varying degrees of uncertainty and equivocality of information processing as shown in Figure 3.
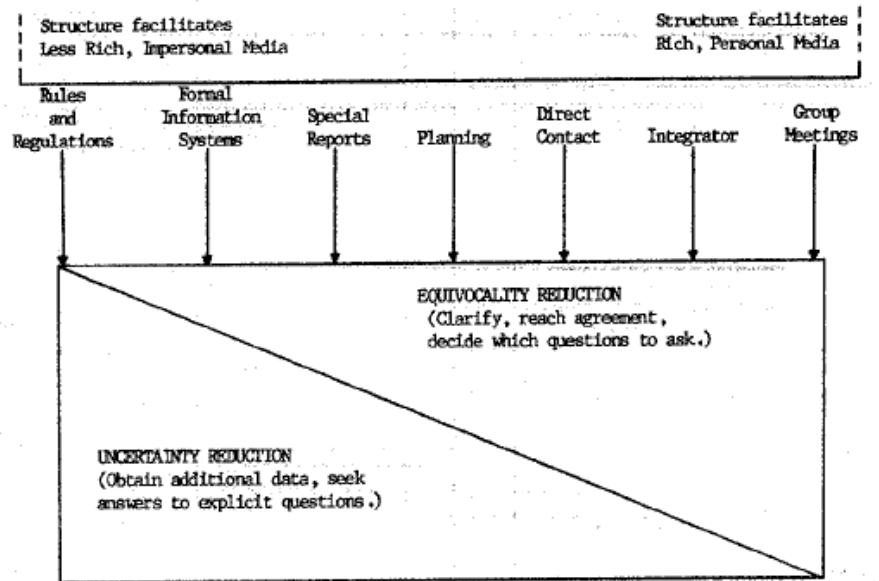
Figure 3: Daft & Lengel's Structural Mechanisms for Reducing Uncertainty or Equivocality

Based on this similar principle, Kowalczyk and Buxmann (2014) adapted this continuum of structural mechanisms in the context of BI&A activities. They conceived it as construct of data-centric versus organisational information processing mechanisms (see Figure 4). They showed how this composition of information processing mechanisms is utilised in different types of BI&A-supported decision processes for reducing uncertainty and equivocality. Through multiple case studies, the authors concluded that equivocality was a major concern in realising value through BI&A activities.
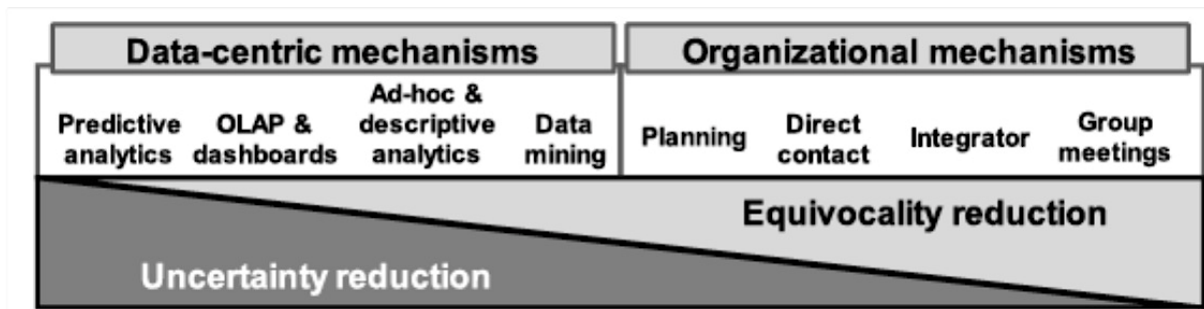
Figure 4: Kowalczyk & Buxmann's Structural Mechanisms for Reducing Uncertainty or Equivocality in BI&A-supported decision processes

2.5. Propositions

The Kowalczyk and Buxmann's model (Figure 4) allows us to explore some interesting ideas with regards the organisation design of the BI&A function. Typical concerns in the functionalisation of BI&A activities is who and where the function should report into. This in turn determines the seniority of the BI&A functional head. If the BI&A leadership is part of the senior management team, or if it was reporting into the chief executive of the organisation, then it would be privy to senior leadership meetings and discussions (i.e. 'Group Meetings' in the Kowalczyk and Buxmann's model). This in turn would allow the BI&A functional head to have a direct pulse on the strategic issues concerning the business, and as such, understand the broader context of any given business problem that the BI&A function may be tasked to look at. This broader context would increase the capability of the BI&A function to address equivocal problems. Furthermore, this argument is summarised in my first proposition:

> ***P1:*** ***The shorter the organisational hierarchical distance between the head of the BI&A function and the chief executive of the organisation, the higher the capability that the BI&A function has in addressing equivocal problems.***

Landier et al (2007) found that decision-making capabilities of the firm was significantly affected by its geographic dispersion due to inability to transfer or preserve the fidelity of certain information over long distances. I make a similar argument that the BI&A function as a whole would gain access to useful business context through organisational proximity (similar to the way that the head the BI&A function gain access to useful business context through the seniority of the reporting relationship). Eckerson (2012) argues that while the data, reporting and governance aspects can be organisationally centralised, the business analysts who are engaged in solving business problems need to be embedded within the lines-of-business to deliver impact. This can be paraphrased as follows: for the BI&A function to engage in solving equivocal problems, the organisation design needs to create the opportunity to have direct contact or group meetings between the BI&A function and the line-of-business where the equivocal problem originates. This suggests that keeping the BI&A function proximally close to the said line-of-business is essential. In fact, if the BI&A function is isolated from the business units that it supports, then it will lose its ability to provide meaningful interpretation to equivocal and ambiguous problems, thereby reducing its ability to assist the business units to make better and faster decisions. And hence, I put forward my second proposition:

P2:   ***The closer the physical proximity of the BI&A function to the line-of-business that it supports, the greater the function's capability in addressing equivocal problems.***

In a rush to create the BI&A function, many organisations take the route to consolidate and aggregate their BI&A-related resources into a single location, citing the "centre of excellence" or "centre of competency" strategies encouraged by authors like Tom Davenport (2006, 2007). By argument of Proposition 2, such approaches would typically reduce the capability of the BI&A function to address equivocal problems as the function becomes isolated from the line-of-business that it supports. However, a potential mitigating factor to this decrease in the function's ability to address equivocal problems is to increase the context-specific business domain experiences of the human resources within the BI&A function. This relates to the 'Integrator' structural mechanism as shown in both Daft and Lengel's (1986) and Kowalczyk and Buxmann's models (Figures 3 & 4). Kowalczyk and Buxmann concluded in their study that the 'Integrator' mechanism could have a profound effect on the success of BI&A-driven activities. And so, we have the following proposition:

P3:   ***Increasing the quotient of context-specific business domain expertise within the BI&A function will increase the function's capability to address equivocal problems.***

Physical aggregation of BI&A-related resources into a single location would result in a logical increase in the formal size of the function. Miller (1987) showed that formalisation (i.e. rules and regulations) was strongly and positively correlated with firm size. According to Daft and Lengel (1986), formalisation is one of the structural mechanisms for reducing uncertainty. This argument is thus summarised through the following proposition:

> ***P4:*** *The greater the extent of physical aggregation of the BI&A human resources and activities within the function, the greater the function's capability in addressing uncertain problems.*

One can argue that the BI&A function shares similarities with the Marketing department. For example, both BI&A and Marketing have pronounced interface with the line-of-business; both BI&A and Marketing have activities that are exogenous and endogenous to their respective functions; both BI&A and Marketing deal with uncertainty about data and its interpretation. In the evolution of the Marketing department and the organisation of its activities, specialisation can be a useful organisational construct to improve adaptability (Ruekert et al, 1985). Similarly, by combining Propositions 2, 3 and 4, we see that a possible way to equip the BI&A function with the capability to address both equivocal and uncertain problems is to introduce specialisation of activities within the BI&A function. Clearly, if the BI&A function consisted entirely of predictive modelling experts, then by token of Kowalczyk and Buxmann's model (Figure 4), it would only be able to resolve problems that are highly uncertain with little or no

equivocality. The type of specialist roles that would be required would clearly be contingent on the nature of the industry as well as the line-of-business within that industry that the BI&A function is designed to support, although Kowalczyk and Buxmann's model could provide the necessary context to evaluate these specialist roles in reducing uncertainty and equivocality. This can be summarised into the following proposition:

> **P5:** *Organising the activities in the BI&A function into specialist roles that are matched to the continuum of uncertainty and equivocality reduction structural mechanisms will increase the BI&A function's capability to address both equivocal and uncertain problems.*

A corollary to Proposition 5 is that we can improve the effectiveness of the BI&A function through a combination of physically centralising certain B&A activities and decentralising others. We argue that by aggregating (i.e. physical centralisation) BI&A resource engaged in uncertainty reduction activities, we can achieve economies of scale and the BI&A resources would benefit from increased interactions with like-minded individuals working on similar problems. On the other hand, BI&A resource that are engaged in equivocality reduction activities should be embedded within or kept physically close to the line-of-business that the BI&A function supports so that they continuously hone their business domain expertise through the media-rich interactions with their business counterparts. And so, we have our final proposition:

P6: *Aggregating resources engaged in uncertainty-reduction activities while co-locating those resources engaged in equivocality-reduction activities with the line-of-business that the function supports will increase the BI&A function's capability to address both equivocal and uncertain problems.*

3. Research Methods

Because of the lack of significant academic and professional literature on the organisational structure of the BI&A function and its effect on the function's capability to deal with equivocal and uncertain problems, I pursued my inquiry through an in-depth inductive case study methodology. This methodology was prescribed by Eisenhardt (1989) and Yin's (1992, 2014), and is particularly useful for constructing theories-in-use. As a research method, the in-depth case study methodology allows the researcher to examine a phenomenon in real-life context (Yin, 1981).

The objectives of the in-depth case study are to describe the 'evolutionary path' of the BI&A organisational structure in a company, explore the nature of the interactions between the BI&A function and its business stakeholders, and explain why some BI&A functions are better at delivering impact for their organisations through data-driven solutions.

As part of the in-depth case study, I developed a semi-structured questionnaire to facilitate the interviews. Two versions of the questionnaire were developed – one for BI&A leaders and practitioners, and one for the senior business stakeholders that the BI&A function interacts with / supports. This was important to contextualise the questions to the backgrounds and experiences of the interviewees, to increase the relevance and fidelity of the responses. The questions were also intentionally open-ended so as to allow the interviewees the ability to

'tell their story' in their own words, resulting in richer and more nuanced responses.

To prepare for the in-depth case study, I completed the required Institutional Review Board (IRB) training, and read up on the methods and techniques of qualitative research. I also took pains to assure the interviewees that full confidentiality would be adhered to during the research journey from data collection to publication, and that they could withdraw from the interview or redact any statement that they had previously made at any time during the research process.

3.1. Sample

I adopted a purposeful sampling approach (Eisenhardt 1989) of the interviewees consisting of BI&A leaders and senior practitioners, and senior business stakeholders who have had sufficient experience interacting with and utilising the outputs of BI&A teams. Given my past extensive experience as a leader in the BI&A domain in consumer banking, I focused my research in that primary domain. This ensured that the interview questions were relevant and contextualised, while the responses from the interviewees were correctly interpreted. I leveraged my professional network across South-East Asia to connect with BI&A leaders, practitioners and senior business stakeholders. The inclusion of senior business stakeholders was critical to get a complete view of the

phenomenon from the perspective of the BI&A practitioner and the 'consumer' of the BI&A outputs.

While Eisenhardt (1989) suggest that interviewing 4 to 10 cases should be sufficient for an in-depth case study, I interviewed a total of 25 individuals selected from 11 consumer banking organisations across South-East Asia. The 25 interviewees consisted of 17 BI&A leaders and practitioners, 8 senior business stakeholders, and 7 dyads of BI&A practitioners and their corresponding senior business stakeholders. Additionally, 6 of the 25 interviewees were not personally known to me.

To ensure research reliability, the BI&A leaders and practitioners interviewed all had significant experiences and work vintages. The BI&A leaders and practitioners all had at least 10 years of experience in the domain, with many having beyond 15 years. The senior business stakeholders were all at least managing director levels, with 5 of them country-level chief executives. They each also must have had at least 5 years of experience interacting with BI&A functions.

3.2.   In-depth Interviews

In conducting the in-depth interviews, the questionnaires were shared with the interviewees ahead of time so that they can prepare themselves accordingly. Two initial versions of the questionnaire were developed – one for BI&A leaders and

practitioners, and one for the senior business stakeholders that the BI&A function interacts with / supports. Each questionnaire had a preface section that explained the intent of the research / interview and the ensuing propositions that were being explored, followed by a section that covers the background of the interviewee and his/her experience with BI&A, either as a practitioner or a 'consumer'. For the BI&A leaders and practitioners, the next section of the questionnaire then covered the details of the organisation design such as reporting hierarchies, personnel duties and sub-functions, the presence of offshoring or outsourcing, and the type of business problems that the BI&A function works on, how it measures success, and the challenges it faces. For the senior business stakeholders, the second section of the questionnaire covered the interaction model between the BI&A function and the business, the types of problems that the business would engage the BI&A function for, the satisfaction with the BI&A function's outputs in terms of its relevance and completeness.

Both questionnaires were modified after the first 6 interviews to incorporate emerging themes that came out of the early interviews and that I was keen to explore further.

Of the 25 interviews, 22 of them were conducted face-to-face, with the remaining 3 conducted over audio conferencing using Skype. All interviews were audio recorded and transcribed. The transcriptions were sent to the interviewees for their review and correction (if any). I opted to personally transcribed each of the interviews so that I could achieve first-hand intimacy with the responses.

The questionnaires can be found in Appendix A, and the transcribed interviews can be found in Appendix C.

3.3. Coding and Analysis

Semi-structured in-depth interviews require a coder who has in-depth knowledge about the subject matter (Campbell et al. 2013), hence my decision to personally transcribe and code the interviews. During the transcribing of the audio recording of the interviews, I would take informal notes on comments, topics and themes that would catch my attention. I would re-read these notes and compare them across the transcriptions to see if they shared commonalities. I then used concept-mapping (Carley 1993) to aid me in relating these themes together. From there, I began my formal coding based on a combination of a priori specifications derived from the research propositions, and incremental themes that emerged from the concept-mapping.

The coding scheme was constructed using words, synonyms and phrases that the interviewees used to describe certain phenomenon. For example, a theme such as 'proximity' would include keywords such as 'closeness with the business', 'floor', 'location', 'regular meetings', water-cooler talk', 'informal discussions', 'access', 'face-to-face', 'in-country'. I would utilise whole phrases and sentences in my coding framework, rather than relying only on singular words. This allowed me to capture broader contexts and richer insights. While there is clearly an element of

subjectivity due to similarity of words and phrases, this was minimised by having a single coder, namely myself.

The entire coding process was painstaking and highly iterative. I would examine data from BI&A leaders and practitioners, and contrast that with data from the senior business stakeholders. I would compare dyads and non-dyads. I would consider the perspectives of local subsidiaries of multi-national consumer banks versus domestic consumer banks. This helped to reduce information biases due to limited perspectives.

I took heed from Charmaz (2014, p. 337-338) to incorporate 'originality' and 'usefulness' into my grounded theory analysis:

- Are there new themes beyond the a priori ones suggested by the research propositions?
- Does the grounded theory challenge or extend on current ideas in the perspectives and organisational construct of BI&A?
- Does the grounded theory open new vistas of potential research areas?
- How can organisations utilise the insights in their current practices?
- What are the current and longer term implications to the current practice of BI&A?

The entire transcribing and coding was done in Excel as I favoured the application's flexibility. The coding scheme can be found in Appendix B.

4. Findings

4.1. Perception of BI&A

We begin this chapter on how Business Intelligence and Analytics (BI&A) practitioners perceive and define their 'practice', and contrast it with the views and perceptions from their business stakeholders. Why is perspective important? According to Hambrick & Mason (1984), the background, experiences and hence, perspectives of senior managers in an organisation will shape the performance and structure of that organisation. Put simply, the way a BI&A function is designed and its intra- and inter-department interaction model within the organisation is determined in part by the way the business seniors and BI&A leaders perceive the practice of BI&A.

While the Holsapple et al (2014) approach is no doubt a break-through attempt to lay down some classification rules on the practice domain of BI&A, it seems somewhat over-engineered, and the lines between each of the classes are not clearly demarcated. Instead, I propose a simpler bifurcated classification that is derived from the interviewee responses and reduces the 'grey area'.

I interviewed a total of 25 individuals, consisting of 17 BI&A practitioners and 8 corresponding senior business stakeholders across 11 organisations (including 7 dyads of BI&A leaders and their respective senior business stakeholders), and solicited their response to the question, "What does BI&A mean to you?" A bifurcated classification scheme emerges readily from the responses. The interviewees perceive BI&A either as a data-oriented or as a decision-oriented

practice. Consider these interview responses that are typical of a data-oriented perspective:

"They will still require this unit [Business Intelligence] as a utility to extract data, interpret data, put it into a nice format (visualisation for example) … So, what do we [Marketing Analytics] do then? Anything to do with data. Whether it's extracting data, manipulating data, interpret data, it's us."

"It's working with data to translate it to insights, into business actions. It's about how you get hold of raw data (internal and external), match it together, do some form of segmentation or analysis. The output ultimately is about helping us understand customer behaviour and consumer thinking. So, Analytics in a company must have business output."

On the other hand, consider these interview responses that reflect a decision-oriented perspective to BI&A:

"As we mature, it became part of the business process. And that's important. If it's not part of the business process, then people can just skip that route and directly go to the 'answer' without thinking about 'why' or 'what' the data is telling us … And management would not sign off unless there's a real 'story' or data to back it up. So that becomes part of the 'DNA' of how we work."

"I guess to me, BI&A is a function that helps the business define, understand, and perhaps find ways to solve the problems, although it's not necessarily the 'cure-all' for the problem. It's a way to bring out the extent of the problem and quantify the problem, and from the quantification, perhaps put some qualitative element of how a strategy could be formed; to attack the problem."

I define a data-oriented perspective of BI&A as one where the focus is on the transformation process from 'data to information to insights to action' (this is a variation of Golfarelli et al (2004) 'data to information to knowledge to action to impact'), leveraging both technology and techniques such as reporting, data mining, and predictive analytics to achieve it.

On the other hand, I define a decision-oriented perspective of BI&A as one where the focus in on influencing the decision-making process and achieving business impact through the generation and execution of data-driven insights.

The data-oriented versus decision-oriented classification finds support in practice literature where the discipline of BI&A can be viewed through the lens of data science versus decision science (Dhingra 2014, Harris 2014, Rajaram 2017). One can think about the difference between these two definitions as the former being activity- and output-centred, while the latter is outcome- and impact-centred.

4.1.1. Perception of BI&A from Practitioners

While there is general consistency that all BI&A practitioners view BI&A as a discipline that uses data as an input, and deriving insights as an output, the group interviewed fell neatly into two camps in their perspectives of what BI&A means to them on a broader basis. For example, the head of the award-wining BI&A function for a Singapore-based bank (ORG1) sums up BI&A as:

"… all about driving value from the rich customer data. It's about working with all the products and segment managers across the business to understand where the problems are. And using the data asset to solve their problems, and actually turn that into action. And so, for us, a lot of the work we do doesn't stop at pretty slides/decks, it's all about "what are you going to do with it", and actually working with our business partners to execute it."

Contrast this with the perspective of the BI&A head from ORG5:

"In my opinion, there are many levels to BI&A, and it depends on the organisation. From the lowest level of Reporting - static reporting. Another level is the capability of handling adhoc requests. Another stage is about problem-solving for the business; sometimes the business may not know how to resolve the problem, what the problem is about, is it well-defined, etc. If the BI&A team can advise them based on what they see from the data, then from a data perspective, it can help the business."

The first interview response is clearly outcome-focused based on such keywords as 'driving value' and 'execution'. This is a decision-oriented perspective. The second comment is clearly activity-focused based on such keywords as 'reporting' and 'advise'. This is a data-oriented perspective.

Table 2 below summarises the bifurcated classification of the 17 responses from BI&A practitioners.

Table 2: Summary of BI&A perspective from interviewed BI&A leaders and practitioners

Participant Code / Org Code	Type of BI&A Practitioner	Summary of BI&A Perspective	Classification	Decision Rights	Definition of Success
PAR1 / ORG1	Regional department head	BI&A seen as front-office activity. It's about solving business problems using data assets. It's action-oriented; partner with business stakeholders to execute against the insights.	Decision-oriented	Implicit. Consulted.	Productivity, client satisfaction, shadow revenue and building out new capabilities.
PAR3 / ORG1	Regional senior practitioner	BI&A is a strategic competitive advantage. It's part of the business process. It's about making informed decisions based on holistic inside and outside view.	Decision-oriented	Implicit. Consulted.	Shadow revenue and client satisfaction.
PAR2 / ORG2	Local department head	BI is about reporting or MIS. BA is about analysing the data for insights.	Data-oriented	No decision rights.	Timeliness of outputs.
PAR5 / ORG4	Regional department head	BI&A is about helping business make better	Decision-oriented	Implicit. Consulted.	Not discussed.

		decisions to solve their business problems. It can be through the provision of reports or through statistical modelling.			
PAR6 / ORG3	Local department head	BI&A is about helping the business define, understand, and solve business problems.	Decision-oriented	Explicit.	Revenue, Sales and Account growth, execution efficiency, building out new capabilities and business insights.
PAR13 / ORG3	Local department head	BI&A is about using analytics to get insights and driving solutions.	Data-oriented	Not discussed.	Not discussed.
PAR4 / ORG3	Local senior practitioner	BI&A is about pattern detection, explaining why and what, and translating that into a solution that can be executed quickly. BI&A is part of the larger business strategy.	Data-oriented	Explicit.	Shadow revenue.
PAR9 / ORG3	Regional senior practitioner	BI&A is about generating insights from data that improves business profitability and executing against it. Don't consider reporting as part of BI&A.	Data-oriented	Not discussed.	Not discussed.
PAR22 / ORG3	Local department head	BI&A is about translating insights into recommendations.	Data-oriented	Explicit.	Shadow revenue.
PAR7 / ORG5	Local department head	BI&A is about data-driven problem-solving. It can be in the form of reporting.	Decision-oriented	Implicit. Consulted.	Quantifiable output of any data-driven solution.
PAR8 /	Local	BI&A covers the full	Data-oriented	Not	Shadow

ORG6	department head	range of activities from reporting to predictive modelling to executing the insights through customer touch-points.		discussed.	revenue.
PAR14 / ORG7	Local senior practitioner	BI&A is about using data to find answers to business problems, and translate them to implementable solutions. Solutions can be as simple as reports and KPI.	Decision-oriented	Not discussed.	Not discussed.
PAR18 / ORG7	Local department head	BI&A is about using data and analysis to solve business problems and executing against it. It's not about reporting.	Decision-oriented	Explicit.	Balance and revenue growth, increasing product cross-sales, and improving operating efficiency
PAR15 / ORG8	Local senior practitioner	BI&A is going beyond reporting to understand the why and what. It encompasses reporting, tracking, analysis and modelling.	Data-oriented	Not discussed.	Not discussed.
PAR19 / ORG9	Local department head	BI&A is a set of capabilities and process around customer contact orchestration, pricing, and sales conversion.	Data-oriented	Not discussed.	Not discussed.
PAR21 / ORG 10	Local department head	BI&A is a way to provide relevant facts to support the decision-making process.	Decision-oriented	Explicit.	% of decisions proactively coming through analytics.
PAR25 / ORG 11	Local department head	BI&A is about the use of qualitative and quantitative data	Decision-oriented	Explicit.	Timely delivery of initiatives

		in aid of decision-making; so that decisions are consistent and aligned with strategy.			and building new capabilities.

Of the 17 responses from BI&A practitioners, 47% have a data-oriented perception to the practice, while 53% have a decision-oriented perception.

4.1.2. Perception of BI&A from Business Stakeholders

The in-depth interviews consisted of 8 business stakeholders who had direct interaction with their BI&A team. These business stakeholders were all senior executives, ranging from country-level CEOs to regional business group heads. In 5 of the cases, the BI&A heads interviewed were reporting into these senior business executives. Of the 8 interviewed business stakeholders, all gave a response to the question, "What does BI&A mean to you?".

Table 3 below summarises the bifurcated classification of the 8 responses from business stakeholders. 33% perceiving it as a data-oriented practice and 67% perceiving it as a decision-oriented practice.

Table 3: Summary of BI&A perspective from interviewed business stakeholders

Participant Code	Type of Business Stakeholder	Summary of BI&A Perspective	Classification
PAR12 / ORG1	Country Head of Consumer Banking	BI&A is working with data to translate it into insights and then into business actions. Analytics must have a business-oriented output.	Data-oriented
PAR16 / ORG2	Country Head of Consumer Banking	BI&A is about the entire spectrum of making decisions with data and operationalising the outputs of the analysis.	Decision-oriented
PAR10 / ORG3	Country Head of Credit Cards & Loans	BI&A is about interpreting data and information and turning them into insights and solutions that address business needs and objectives.	Data-oriented
PAR23 / ORG3	Country Head of Consumer Banking	BI&A is about insights on customer behaviours, the ability to predict future customer behaviours, and the ability to execute on it.	Data-oriented
PAR20 / ORG4	Deputy Group Head of Consumer Banking	BI&A is about decision-making. It's about using the scientific method to run the business. It's about predicting customer behaviours with a lot more accuracy.	Decision-oriented
PAR11 / ORG 5	Country Head of Credit Cards & Loans	BI&A is about making better decisions to improve operating and business efficiencies.	Decision-oriented
PAR17 / ORG7	Senior EVP of Bank and Chairman of subsidiary consumer bank	BI&A is about extracting business efficiencies and reducing credit risk to drive business and revenue growth.	Decision-oriented
PAR24 / ORG8	CEO	BI&A is about integration with a larger whole consisting of Strategy, Performance and Research, to drive decisions.	Decision-oriented

When we compare the results between the BI&A practitioners and corresponding business stakeholders (7 dyads where we could draw responses from), 4 dyads were synchronised in their perceptions of BI&A (namely ORG3, ORG4, ORG5 and ORG7); and that view was mostly 'decision-oriented' with only 1 dyad identifying with 'data-oriented'. In two of the dyads (namely ORG1 and ORG3),

the BI&A practitioner's view was 'decision-oriented' while the business stakeholder's view was 'data oriented'. In the remaining dyad (namely ORG2), the BI&A practitioner's view was 'data-oriented' while the business stakeholder's view was 'decision-oriented'. Table 4 below summarises this comparison for the 7 dyads:

Table 4: Comparison of BI&A perspective between BI&A practitioners and business stakeholders

Dyad	BI&A Practitioner's Perception of BI&A	Business Stakeholder's Perception of BI&A
ORG1 – Local Domestic Bank in South East Asia	Decision-oriented	Data-oriented
ORG2 – Local Domestic Bank in South East Asia	Data-oriented	Decision-oriented
ORG3 – Foreign subsidiary of US Bank in South East Asia	Decision-oriented	Data-oriented
ORG3 – Foreign subsidiary of US Bank South East Asia	Data-oriented	Data-oriented
ORG4 – Local Domestic Bank in South East Asia	Decision-oriented	Decision-oriented
ORG 5 – Foreign subsidiary of South East Asian Bank	Decision-oriented	Decision-oriented
ORG7 – Local Domestic Bank in South East Asia	Decision-oriented	Decision-oriented

The mis-match in dyads ORG 1 and ORG 3 did not seem to result in any significant issues based on the interviews. The BI&A function in those

organisations were highly valued and were meeting the expectations of their business stakeholders. This is likely because the outcome-focused 'decision-oriented' perspective of BI&A expressed by the BI&A leaders was beneficial to the business stakeholders.

However, the mis-matched dyad of ORG2 reveals some interesting insights. In ORG2, the BI&A head's response was classified as 'data-oriented while the corresponding business stakeholder's response was classified as 'decision-oriented'. The BI&A head reported into the business stakeholder as a 2-down. While the BI&A head was focused on the activities of his BI&A function, the business stakeholder was interested in the outcome and impact. This mis-match was particularly acute when going through the details of the in-depth interviews with both individuals. The BI&A head expressed frustration with his attempt to transform the BI&A function into a more business-oriented department (versus the current data-centric support orientation) while the business stakeholder opined that the BI&A function is not able to cope with equivocal-type problems, and that he sees his fellow and subordinate business stakeholders performing the 'last mile' function of interpreting the data/information for decision-making. It is evident that the business stakeholder, while appreciating what BI&A as a discipline can bring to the table ('decision-oriented'), he does not necessarily embrace the notion that the underlying supporting activities need be performed exclusively by the BI&A function.

4.2.   Tone from the Top

In his 2006 *Harvard Business Review* article, *Competing on Analytics*, author Tom Davenport suggest that senior management advocates are an important factor to achieving success in implementing an enterprise-level analytically-oriented culture across an organisation. Many of the examples of such successful companies have CEO who are the chief analytics advocate. Various reports by Gartner (Burton et al 2006, Hostmann 2007) also espouse the need for senior business leader sponsorship in the development of a centralised BI&A function and building BI&A capabilities for the organisation. Senior management sets the 'tone at the top' in terms of the importance of BI&A, and provide cultural enforcement to sustain the desired change in behaviour and mind set.

ORG1 is a local domestic bank in South-East Asia which has won awards for having the best BI&A function several times in the past. I interviewed both the head of the BI&A function (PAR1) and the head of the consumer business (PAR12) for whom the BI&A function provides the most support. I distilled the cultural enforcement into 3 activities, starting with:

a)   Senior management ***asking for facts and evidence*** to justify any proposed or implemented decisions,

b)   Ensuring that those facts and evidence are ***independently corroborated*** by the BI&A function, and

c)   Raising the ***visibility and profile*** of the BI&A function by having them actively participate in decision-making meetings.

The starting point of 'Asking for Evidence' has been similarly observed by many commentators and researchers in the BI&A domain, including Davenport (2006) and Watson (2016) whom I quote, "Workers must know that senior management expects analytics to be part of decision-making processes. One strategy is to ask employees what analytics were used in arriving at a recommendation or decision."

While ORG1 had a BI&A function for the last 20 years, it was not until the CEO actively promoted an evidence-based culture of decision-making 10 years ago that the organisation started to gain significant momentum with its BI&A activities and strategies, culminating with the multiple awards and public recognition.

But ORG1 went further than asking for evidence. It required that the business stakeholders sought the inputs of the BI&A function (which had gained early credibility with senior management), creating a 'lock & key' mechanism to further reinforce the permeation of BI&A across the organisation. The head of the consumer business for ORG1 has this to say:

> *"He [CEO] being the leader that he is, he's always trying to push us to the next level ... So even though we are engaging a lot with the analytics team, he's saying we are not engaging analytics enough. So, at that level, he's a role model, where he addresses certain problems by seeking the opinion of analytics - the 'single source of truth'. He will not listen to Finance, he will not listen to ground-level leaders. He defers to 'the single source of truth' -*

analytics. So that's our internal culture, that's how we operate internally; that's the tone from the top. So, everybody falls in line."

Consider a similar comment from the senior management in ORG4, another local domestic bank in South-East Asia:

"The seniors have always been singing the same tune. But it's the extent that it's been cascaded down. Initially, people were sceptical about Analytics, but over time, I see a lot more adoption. People now see it as a way of decision-making. So, would I or the product managers supersede what the Analytics team propose? I don't see it happening."

This 'Independent Corroboration' or input from the BI&A function is important. As organisations become more enabled for self-help access to information, it doesn't always mean they have the analytical maturity to interpret the information appropriately or the intention to present the information in an unbiased manner due to various organisational political agendas. Consider the case of ORG8, another local domestic bank in South-East Asia, where the CEO is a big believer and supporter of the value of BI&A. While he demands facts and evidence from his subordinates to justify their decisions, the lack of an independent assessment led to one of his subordinates intentionally sabotaging an initiative simply to prove that he (the subordinate) was right in his belief that the initiative was a bad idea.

Finally, senior management who advocate BI&A actively raise the profile and visibility of their BI&A functions by having them participate in their strategy planning and decision-making meetings. They seek to weave BI&A into the fabric of their organisations. Tom Davenport sums it up as follows in his article *Competing on Analytics* (2016): "We are trying to build our people [analysts] as part of the business team … we want them sitting at the business table, participating in a discussion of what the key issues are, determining what information needs the business people have, and recommending actions to the business partners."

ORG1 underscores this 'Raising of Visibility' by making BI&A a core pillar of its business strategy. Senior management of ORG1 has this to say:

> *"… analytics is formally part of the business strategy. In the consumer bank strategy, we clearly articulated that 6 years ago … all 2,000 of us in the consumer bank, will be able to tell you. They may not be able to say the word 'analytics', but they will tell you 'data', 'big data', 'segmentation' … these are all principles of our analytics. This is in the strategy, and I bet my last dollar, that all 2,000 employees can articulate this."*

The BI&A function at ORG1 partakes in all the Strategy and Operational planning sessions, where they provide their inputs to those discussions, and take-away key priorities to work on:

"The analytics team has full access to what's going on so that they can take the appropriate path to gather the data … I give them full access to what is being discussed in the business meeting and they participate rigorously in all these meetings – because they will ask questions, they act as a sounding board."

Similarly, senior management in ORG4 has this to say:

"Actually, in all our strategy meetings, in all our product launches, in all our customer journey thinking, Analytics has become front-and-centre in everything we do."

Table 5 below summarises the 3 observed BI&A cultural enforcement activities:

Table 5: Definition of BI&A cultural enforcement activities

Tone from the Top – Cultural Enforcement	Definition
Asking for Evidence	Does senior management request for facts and evidence to support proposals and decisions from subordinates?
Independent Corroboration	Does senior management request for the concurrence of BI&A function when presented with facts and evidence?
Raising Visibility	Is the BI&A function invited to senior management meetings and/or strategy planning meetings or are BI&A activities discussed in public forums?

Based on the interview inputs from senior business leaders across 7 banks, I summarise their adherence to these cultural enforcement practices in Table 6 below:

Table 6: Summary of interviewed organisations' adherence to BI&A cultural enforcements

From Business Stakeholders	ORG1	ORG2	ORG3	ORG4	ORG5	ORG7	ORG8
Perception of BI&A	Data	Decision	Data	Decision	Decision	Decision	Decision
Asking for Evidence	Y	N	N	Y	Y	Y	Y
Independent Corroboration	Y	N	N	Y	N	Y	N
Raising Visibility	Y	Y	Y	Y	Y	Y	N

'Raising Visibility' alone does not change the game. 6 of the 7 dyads interviewed shared that their BI&A head attends their leadership meetings, even though not all are direct reports to the business heads or CEO. However, as detailed earlier, ORG2 has not realised the full value of BI&A for their organisation. Similarly, for ORG3, the business head ultimately fired the BI&A head (post my interview) for not being able to align with business priorities and deliver value. This may have a correlation with the negative response from these 2 organisations on 'Asking for Evidence' activity.

From my interviews, only ORG1, ORG4 and ORG7 are pleased with the value that their BI&A function is creating, and this is similarly reflected in the positive responses on all 3 cultural enforcement activities.

4.3. Information Processing – Reducing Equivocality

In Chapter 2.4, we were introduced to the phenomenon of uncertainty and equivocality in information processing. As stated then, uncertainty is reduced through the acquisition of more information, while equivocality is reduced through integration of different types of information and different perspectives of interpretation.

In my interviews, the term 'equivocality' is used interchangeably with 'ambiguity', although there is a nuanced difference in their respective meanings. In the context of my dissertation nonetheless, they will mean the same thing.

BI&A activities are clearly a subset of information processing. While the reduction of uncertainty is one of the primary objectives of engaging in BI&A activities, the phenomenon of equivocality has not been discussed in the context of BI&A literature. When asked if equivocality does indeed exist in BI&A activities, all 25 interview participants unanimously agree, and that equivocality is one of the major causes of irrelevant or incomplete BI&A-driven solutions. The regional analytics senior for ORG3 has this to say:

"So, most of the questions we get are ambiguous. But if the business person making the request already understands what Decision Management or Analytics does, he can already pre-filter what the request is. From an analytics point of view. However, sometimes I find that when they pre-filter it, they think they are experts but they are not. Which is even

worse because you end up developing something that's never going to be useful."

To better understand the phenomenon of equivocality or ambiguity, I propose a deconstructive framework for BI&A-driven problem-solving. This framework was suggested by PAR5 from ORG4 during my interview with him. Diagrammatically, the framework is as follows:

Business Problem → Data Problem → Data Solution → Business Solution
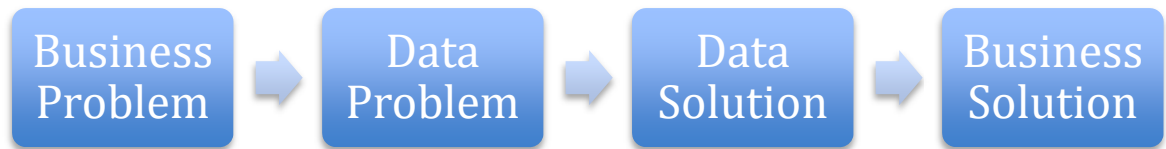
Figure 5: Translating a business problem into a business solution

For BI&A activity to commence, a Business Problem needs to be translated into a Data Problem. For example, if the business problem is acute customer attrition, translating it into a data problem implies finding the appropriate collection of data that is associated with the attrition phenomenon or problem, such as customer demographics, product pricing, offers from competition, product usage, etc. Once the collection of data has been assembled, the BI&A function then performs a variety of data mining techniques to prove or disprove hypotheses and generate incremental insights and translate that into a data-driven output such as a prediction or forecast model or a classification (i.e. segmentation) model. This represents the Data Solution stage. The data solution then needs to be further integrated into the day-to-day operating process of the organisation for final

implementation and execution. For example, a customer attrition prediction model would need to be translated into a customer retention campaign with the appropriate resources and marketing offers to support it. This represents the translation for a Data Solution to a Business Solution.

It should be obvious to the reader that the exercise of translating a Business Problem into a Data Problem can be subjective. This is akin to *problem framing* (Getzel 1982). This subjectivity in problem framing is a source of equivocality and ambiguity in BI&A work as confirmed through the in-depth interviews. Equivocality occurs because of the different 'lens' that are applied in the initial interpretation of a business problem or business phenomenon. Consider this response from the Head of BI&A from ORG10, when asked if he experiences ambiguity or equivocality when translating a business problem into a data problem:

> *"Yes, that is the case. For example, the Marketing person would interpret the business problem through his marketing lens, and we would end up working on that specific perspective. But when we could get a broader context to the problem, we had a better appreciation of the origins of the problem."*

While it may seem that translating a Data Problem into a Data Solution is predominantly solving an uncertainty problem, but it too can be subjected to some

degree of equivocality in the choice of solution and its efficacy to address the business problem.

Translating a Data Solution into a Business Solution requires familiarity with both the business domain and the business operating processes – "they must be closely linked to business strategy, easy for end users to understand, and embedded into organisational processes to take action at the right time." (LaValle et al. 2010).

In the 'transmutation' of business problem into business solution, it is therefore important to consider the words of Zack (2000): "Ambiguity must first be resolved, often leading to equivocality as multiple interpretations emerge. Resolving equivocality creates a shared context for subsequently dealing with uncertainty or complexity, and ongoing systematic learning."

4.3.1. Organisational Proximity – Reporting Hierarchy

When translating a business problem to a data problem, it is important to have first-hand access to the relevant background and context. And ensuring that any proposed data solution is ultimately practical and aligned to the broader business strategy and objectives is also a critical consideration. Because information does degrade as it passes down the organisation hierarchy [Jablin 1980, and Dansereau & Markham 1987], it is therefore essential that the BI&A function has access to senior management and senior business stakeholders. This access will allow the BI&A function to recognise the multi-dimensional perspectives of a given

business challenge, and allow the BI&A function to provide solutions to problems that have a more ambiguous or equivocal nature.

Access to senior management and senior business stakeholders can be achieved through formal reporting hierarchy. For example, if the head of the BI&A function was a direct report to the CEO or senior-most business stakeholder, or if the head of the BI&A function was officially part of the leadership team, the BI&A function would be privy to more strategically-contextual information. The senior business stakeholder of a large Singapore-based Asia bank (ORG4) underscores this:

> *"[The BI&A head is a one-down to me because of] the need for their involvement in high-level strategy discussions. And if the Analytics head is a 2-down, it's a little bit more difficult to have them at these meetings. It's harder to include them in discussions that may or may not necessarily involve analytics. Like buying a bank. But he needs to understand the background and context."*

Similarly, the senior business stakeholder of a ORG5, for whom the BI&A function reports directly into, has this to say:

> *"I see a difference in the way I interact with my decision science team versus the way the other stakeholders interact with them. The other business units also have [their own analytics] team. The way they utilise*

the team is primarily for data extraction, and only when there's a need to extract the leads for campaigns will they raise some request. They never involve the team in the day-to-day discussions. The difference I see is that in my team, they are part of my daily process and discussions. Even though there may not be a direct relationship to the data extraction or modelling or statistical computation, from a business standpoint, they understand what I'm driving at."

I therefore put forward my first proposition:

P1: **The shorter the organisational hierarchical distance between the head of the BI&A function and the chief executive of the organisation, the higher the capability that the BI&A function has in addressing equivocal problems.**

The results from the in-depth interviews, as detailed in Table 7 below, show strong support for the proposition.

Table 7: Summary of support for Proposition 1 based on coded interview responses

Response	BI&A Leader	BI&A Practitioner	Business Leader
Agree	10 (83%)	2 (40%)	8 (100%)
Disagree	0 (0%)	0 (0%)	0 (0%)
Indeterminate	2 (17%)	3 (60%)	0 (0%)
TOTAL	**12 (100%)**	**5 (100%)**	**8 (100%)**

As part of the case study methodology, interviewees were not explicitly asked the question encapsulated in Proposition 1. Rather, to derive the 'Agree/Disagree' response classification, their opinions were triangulated from their answers to questions on their organisational reporting hierarchy (including their satisfaction with it), the access to senior management discussions and meetings, their involvement in strategic issues, the amount of ambiguity or equivocality in the type of business challenges that their BI&A functions are tasked to work on and how they go about dealing with it, and how all these influence the completeness and relevance of their BI&A outputs and solutions.

In Table 7, there were 2 cases of 'Indeterminate' for BI&A Leader and 3 cases for BI&A Practitioner. For the latter, these 3 indeterminate cases were due to the inability of the interviewees to provide a sufficient opinion on the organisational reporting hierarchy (given where they were in the organisation). For the former, the 2 indeterminate cases are explained as follows:

- Case 1 is PAR13. This BI&A leader acknowledges the presence of ambiguity and equivocality in the range of problems that his BI&A function is tasked to work on. However, the interview dialogue on senior management meetings became a discussion on influence and relationship-building rather than access to contextual information and how it may affect the completeness and relevance of the BI&A solutions.

- Case 2 is PAR19. The BI&A leader similarly acknowledges the presence of ambiguity and equivocality in the range of problems that the BI&A function engages in. However, the interview dialogue moved quickly into discussions around offshoring and centres of excellence and the how these entities are challenged in dealing with equivocal and uncertain problems. There was insufficient discussion around the organisational reporting hierarchy to support the analysis for Proposition 1.

The full interview transcripts are available in Appendix C.

Coming back to the overall analysis for Proposition 1, the in-depth interviews further revealed that while the hierarchical reporting structure may afford senior management access for the BI&A function, the perception of BI&A and the role it plays in the organisation by those at the leadership table directly affects the types of business problems that the BI&A function is exposed to, and drives the decision whether the leadership team is prepared to engage with the BI&A function on problems that are more equivocal in nature.

Consider the two diametrically opposing comments below. The first is from the senior business stakeholder of ORG5 who has a decision-orientation of BI&A. The second is from the senior business stakeholder of ORG2 who has a data-orientation of BI&A. Both senior business stakeholders have the head of their BI&A function at their leadership table and agree on the importance of that inclusion:

"Today, because the decision science team is under me, I don't mind giving to them any of the things I want to do. But if the decision science team was differently structured and not reporting directly under me, then the business units may be uncomfortable to involve them in all kinds of business problems."

"… the first thing I want the Segment and Product team to do is get the data. So, they need to run a campaign [to collect demographic data] … once you have that data, then you can begin to design the engagement and conversation. But in this case, analytics is quite far back. They can take the [thousands of] names when it becomes available and operationalise it. So that is something I won't involve the Analytics head from day one. In a large consumer bank like [ours], it's impossible for him to get involved."

This desire to engage with the BI&A team across a broad spectrum of business problems shapes the ability of the BI&A function's capability and capacity for dealing with equivocal problems. The head of the BI&A function for ORG5 is significantly more junior that his counterpart in ORG2, and running a smaller team. However, the BI&A function in ORG5 is actively engaged in the design and refresh of product value propositions, running various simulations of business outcomes, and can quantify the financial impact of its recommendations and activities. All these are absent for the BI&A function of ORG2.

Knoben and Oerlemans (2006) describes the relationship between trust and the various forms of proximity such as organisational proximity, technological proximity, and geographical proximity. The BI&A leader of ORG5 is more organisational proximal to the senior leadership than his counterpart in ORG2. This increase in proximity increases the ORG5 BI&A leader's ability to seek and achieve convergence when translating a business problem into a data problem, thereby reducing equivocality at an earlier onset.

4.3.2. Physical Proximity – Co-location with Business Stakeholders

Eckerson (2012) argues that business analysts who are engaged in solving business problems need to be embedded within the lines-of-business to deliver impact. Given the need for media-rich interface when dealing with equivocal problems (Daft & Lengel, 1983 & 1986), the BI&A function needs to be placed in a situation where it has ample opportunity for direct contact or group meetings with the line-of-business. This suggests that keeping the BI&A function proximally close to the said line-of-business is essential.

This is also a natural extension from *Proposition 1*. My study has shown that *Organisational Proximity* leads to the BI&A function having access to business strategies, and useful backgrounds and contexts to business challenges thus enabling the BI&A function to first recognise the equivocal nature of many business problems, and to then engage in solving them. However, with organisational proximity, the flow of information transmission is still very much

vertical (i.e. from top to bottom). By having the BI&A function physically near the business stakeholders that it supports, might the whole BI&A function benefit from having a more horizontal flow of contextual information?

Table 8 below summarises the state of co-location with the respective business stakeholders (aka line-of-business or LOB) that the BI&A function supports for the organisations covered through the in-depth interviews. Of the 11 organisations interviewed, 9 of them, or 82% centralise their main BI&A function (excluding the offshore or outsource parts of the function). That is, the resources associated with the BI&A function sit very closely together at the same location. Being truly embedded with the LOB means to be co-located on the same floor. Of the 11 organisations, only 4 were co-located on the same floor as the LOB it supports.

All the BI&A leaders and BI&A practitioners interviewed agreed with the importance of having physical proximity to the business stakeholders (LOB) that they support. They agree that physical proximity allows their BI&A function to have better access to the backgrounds and contexts around the business challenges they've been asked to work on, improves the fidelity of information transmission, increases the richness and frequency of interactions, and engenders feelings of trust and relationship-building.

Organisation Code	Physical Centralisation of BI&A	Physical Proximity with LOB	Offshore/ Outsource location	Comments
ORG1	Y	Co-located in same building with some LOB; not on same floor	Y China	Co-seating with LOB a few days a week
ORG2	N	Co-located in multiple buildings with LOB; Co-located on same floor with 1 LOB	N	Previously seated centrally in one building; co-location changes made in the 2015
ORG3	Y	Co-located on same floor for SG and ID; Co-located in same building for MY	Y India	Malaysia team used to co-locate on same floor as LOB; now on different floor
ORG4	Y	Co-located on same floor	Y India	Offshore site is an outsourced agency
ORG5	Y	Co-located in same building	N	
ORG6	Y	Co-located in same building	Y China	LOB has their own small embedded auxiliary team of analysts
ORG7	Y	Co-located on same floor with majority of LOB	N	LOB has offsite group in another state
ORG8	Y	Co-located in same building	N	
ORG9	Y	Co-located in same building	Y	Multiple offshore locations across the world
ORG10	N	Co-located on same floor in multiple locations with LOB	N	LOB in different states
ORG11	Y	Co-located in same building	N	

The BI&A leader (PAR21) of ORG10 had this to say about physical proximity and access to backgrounds and contexts:

"I find that physical proximity does matter a lot. [When] I was working from Chennai on [a project for the Singapore market], I saw this as a similar

problem that I had solved for the India market, and so I applied the same model to the Singapore context. I could get a reasonable fit. But then [the business stakeholder] asked me why I was so focused on the fit of the model rather than looking at what was driving the prediction ... whether we had looked at all aspects of the customer. And that changed the way we were looking at analytical models. And that's when we relooked at whether price points should be an input into the model, whether the demographics being used were regularly being updated, what kind of transactional variables were being considered. These were questions around customer's interest and preference. It was thought provoking and gave us pause to consider how analytical models could be looked at from a different perspective. ... That made me realise that the business part of analytics was important. I could not solve that problem completely being in Chennai. I had to travel to Singapore for 10 days to sit with the business, and that completely changed the final solution."

The BI&A leader (PAR2) of ORG2 recently moved a subset of his team to a different building to be co-located on the same floor as one of the primary LOB that they support. Prior to that, the BI&A function was seated centrally. They were neither on the same floor or in the same building as the LOB; the LOB was in multiple locations. The BI&A leader had this to say about the co-location changes:

"More interactions mean you get to be exposed to more [of the business]. You understand more ... you talk to them more ... sometimes you receive an email request, but the email may not exactly convey the true objective. You need to go back and ask questions. More interactions allow for a building of relationship; then we will be more open; we can talk. Trust-building. One of the problems here is that we don't share information. A lot of the business strategy presentation decks are not shared."

As physical proximity reduces, the richness of the media exchange decreases (i.e. less face-to-face), and interactions become more formalised to compensate (Torres, 2004). This formalisation of interaction can result in mis-interpretation and loss of information fidelity. Consider the comments from the BI&A leader (PAR18) of ORG7:

"Right now, things are working because the physical proximity helps. I'll give you an example. Right now, we are working with an external vendor related to [stakeholder's] business. The vendor is offsite and we interact via conference calls and emails. The vendor is in Manila [where we are based as well], they are Filipinos, but just not in the office. Initially, the interaction was not working. The interpretation was not correct. Things were getting lost in translation. To my team, it seems like the task was simple to understand, but having different backgrounds, it's not good to assume that what's simple for us is also simple for them. So we asked the person to come see us. And that worked. ... If there's some ambiguity, [the vendor] will interpret it themselves.

So with the vendor, the face-to-face helped to clarify. And the actual product, when I saw it, was really good. I was shocked; I was so impressed."

Consider the comments from the BI&A leader (PAR6) of ORG3. His BI&A team was centralised and co-located on the same floor as the LOB they support. In 2014, the BI&A team shifted and was no longer on the same floor as the LOB, although they remain in the same building. His comments below underscore the increase, however slightly, of formality in interactions, as a compensatory mechanism for the reduction in contextual information:

"We used to be seated next to the businesses ... We are within walking distance - a couple of floors up. We are on different floors now ... We are no longer that accommodative; the relationship is slightly affected by distance, even though it's a few floors ... Let's say the flexibility has been reduced from 100 to maybe 70 now ... used to be a time when business problems or issues happen, we could act on it within the same day to understand it or even look at the data immediately. Now it's no longer that spontaneous. It could be because of process reasons and governing reasons - we want to make sure the proper kick-off meetings happen and we discuss it thoroughly ... you can argue that this makes things more effective vs starting something from scratch without knowing where it's going to head ... but if you ask a business person, the flexibility has been reduced."

The physical proximity also engenders relationship building and trust (Goessling 2004) as explained by the BI&A leader (PAR18) of ORG7:

"… the face-to-face builds the relationship for the team. So, my team is now more comfortable talking to the business stakeholders. And we are in the same building and it's convenient to meet."

From these interview insights, I therefore put forward my second proposition in this paper:

P2: ***The closer the physical proximity of the BI&A function to the line-of-business that it supports, the greater the function's capability in addressing equivocal problems.***

The results from the in-depth interviews, as detailed in Table 9 below, very clearly show strong support for this proposition.

Table 9: Summary of support for Proposition 2 based on coded interview responses

Response	BI&A Leader	BI&A Practitioner	Business Leader
Agree	10 (83%)	5 (100%)	8 (100%)
Disagree	2 (17%)	0 (0%)	0 (0%)
TOTAL	**12 (100%)**	**5 (100%)**	**8 (100%)**

Two BI&A leaders disagree with the proposition. Consider the views of one of them (PAR5 of ORG4):

"I think there are advantages and disadvantages. It's really where you want to focus on. Co-seating with the business leads to better integration. There's learning, there's data, there's re-usable assets that you get with the Analytics teams seated together. So, to me, it's really about driving a mind-set rather than driving proximity. So, the mindset is that you need to work very closely. It doesn't mean you have to sit with them. In my entire GE experience, it didn't matter where people sat."

4.3.3. The Integrator

Kowalczyk and Buxmann (2014) contextualised the work of Daft and Lengel (1986) to BI&A activities. In both their approaches, 'Group Meetings' and 'Integrator' feature highly in terms of equivocality reduction. 'Group Meetings' as a mechanism is addressed through both 'organisational proximity' and 'physical proximity' as both these design constructs increases meeting interaction with the business stakeholders.

The integrator role continuously comes up during the in-depth interviews, and is most profoundly felt by the business stakeholders. Consider the following comments from the senior business stakeholder (PAR10) of ORG3:

"She came with some experience. That's why we picked her ... I expect her to manage that quality issue ... But when I didn't have that person and I had a junior person before, the quality sucked. And not only quality sucked, but it

was just not relevant ... The junior most guys don't have the experience to understand what I was asking ... But what I've seen is that having a senior person there, even my direct [reports] get a benefit ... the information doesn't get lost in translation. But if there's a junior person on the other side [Decision Management], which was our problem for a long time ..."

Here's another similar comment from the senior business stakeholder (PAR12) from ORG1:

"... there are only those few faces that will always interface with our leadership ... These are the few that will always interface with business ... So, at the strategic level, where we are translating a business problem into a data problem, it will involve these folks, and they are very good. All 3 of them, in my view, are strong technically, but are able to connect with business. They know business, and business trust them ..."

Based on the previously mentioned deconstructive framework of translating a business problem into a business solution (see Figure 5), the integrator is the primary person within the BI&A function to translate a business problem into a data problem. The integrator seeks convergence of the various perspectives of the problem statement through iterative discussions with the business stakeholders. The integrator could be the head of the BI&A function (for smaller functions) or it could be a senior member of the BI&A function. Seniority is clearly a requirement as the person must be able to interface with senior stakeholders and possess

sufficient business domain knowledge (acquired to work vintage) to recognise the equivocality of a business challenge, and to translate it effectively into a data problem.

The integrator role is clearly not an 'order-taking' job. It was not designed to simply aggregate and relay information requests between the business stakeholders and the rest of the BI&A function. Rather, the integrator role grew out of the need to increase context-specific business domain expertise within the BI&A function to address problems of a more equivocal nature, i.e. translating a business problem into a data problem.

I therefore put forward my third proposition in this paper:

> **P3:** **Increasing the quotient of context-specific business domain expertise within the BI&A function will increase the function's capability to address equivocal problems.**

The results from the interviews are detailed in Table 10 below, and they clearly show strong support for this proposition.

Table 10: Summary of support for Proposition 3 based on coded interview responses

Response	BI&A Leader	BI&A Practitioner	Business Leader
Agree	11 (100%)	5 (100%)	7 (88%)
Disagree	0 (0%)	0 (0%)	1 (12%)
Not asked	1 (0%; not included)	0 (0%)	0 (0%)
TOTAL	**11 (100%)**	**5 (100%)**	**8 (100%)**

The lone exception business leader who doesn't agree with this proposition (PAR16 of ORG2) sees the BI&A function as a last-mile (i.e. execution) function. He doesn't see the BI&A function having a role participating in discussions to reduce equivocality and find convergence on a business problem. Instead he sees the task of convergence predominantly with the business stakeholders.

4.4. Information Processing – Reducing Uncertainty

Let us now unpack the phenomenon of uncertainty in information processing. Uncertainty is reduced through the acquisition of more information. So, we focus on specific organisational constructs of the BI&A function that facilitates the acquisition of more information.

Two major organisational constructs were explored. I define *centralisation* as the organisation construct to pool BI&A resources into the country or state location where the parent or regional headquarters reside. I define *offshoring* as the organisation construct of pooling BI&A resources into a location *away* from the parent or regional headquarters.

A third construct – o*utsourcing* – was also lightly explored. Outsourcing is the organisational construct of shifting the BI&A resources to a third-party entity. The third-party can be located within the same state or country as the parent or regional headquarters or it could be in an entirely different location.

It would seem intuitive that by pooling BI&A resources together (either through centralisation or offshoring), the amount of data and information available to the BI&A function would similarly increase. If the pooled resources are physically proximate to each other, then it would increase the amount of team interaction, leading to a more effective sharing of data and information. This in turn would lead to the BI&A function's capacity to deal with uncertain problems. I therefore put forward my fourth proposition in this paper:

> ***P4:*** ***The greater the extent of physical aggregation of the BI&A human resources and activities within the function, the greater the function's capability in addressing uncertain problems.***

This proposition was never directly posed to BI&A leaders and practitioners. Rather, the agreement or disagreement to the proposition was derived through their views on centralisation and offshoring. Most of the organisations covered in the interviews had business presence in more than one country and could therefore speak about the outcomes or rationalisation around the desire, or lack thereof, for centralisation and offshoring. Business leaders were excluded from the analysis

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given that they were too removed from the direct workings within the BI&A function.

The results from the interviews as detailed in Table 11 below show mixed support for this proposition.

Table 11: Summary of support for Proposition 4 based on coded interview responses

Response	BI&A Leader	BI&A Practitioner
Agree	5 (50%)	1 (33%)
Disagree	5 (50%)	2 (67%)
Indeterminate	2 (0%; not included)	2 (0%; not included)
TOTAL	**12 (100%)**	**5 (100%)**

This outcome was somewhat counter-intuitive. Diving deeper into the interview conversations, several new insights came to light. These are expounded in the next section.

4.4.1. Data Partnerships

One key insight from the in-depth interviews is that the acquisition of more information is driven by the types of internal partnerships to gain access to data. Note that information is data placed into context, i.e. data that has been interpreted. Internal data resides within the organisation's operating systems and requires IT (information and technology) support to extract and curate it for use by the BI&A function. The BI&A function's perspective of data is different from

that of IT and this difference is underscored by the comments from the BI&A leader (PAR5) of ORG4:

> *"At the bottom, first is the data architecture - this is a piece that needs to be part of BI; it's largely in the technology space right now. The problem with it being in the technology space and BI people not owning this is they [technology] build it from an efficiency standpoint and not from an ease of usage and "what is it that you want to do"."*

As such, many BI&A functions create their own intermediate or surrogate IT team, both to support their internal BI&A capabilities as well as to interface and work closely with the main IT function.

Consider the response from the BI&A leader (PAR8) of ORG6:

> *"There are 8 teams within my overall structure … If you look at the organisational structure, one end of the structure starts from the data perspective, and the other end of the spectrum starts from the analytical perspective … I start with Capabilities Development … essentially a group of guys who can manipulate data and build data assets for other areas of the [BI&A] team to leverage …"*

And a similar response from the BI&A leader (PAR18) of ORG7:

"What do we need for an analytics team? We need data, we need infrastructure. So, I have an infrastructure team so that I can access the system, get the data that I want and also fix the plumbing ... Yes, it's a proxy IT, but it's for my team. It's not meant for external ... there's so many fragmented systems across the bank ... so the infrastructure team is working on solving these problems with the external IT team."

Therefore, to increase and enhance a BI&A function's ability to deal with uncertain problems, one should cultivate a strong partnership and collaboration with one's internal IT function.

4.4.2. Experimentation

Another key insight from the interview is the ability of the BI&A function to create new information (i.e. contextualised data) through experimentation. An experiment is simply the execution of a well-designed test to collect contextualised data to either validate a set of hypotheses, or to shed incremental insights into a phenomenon that is not well understood or which has insufficient data to construct an understanding. The BI&A function needs to have the technical skills to design experiments to collect unbiased data and the infrastructure ability to execute it.

The need to run experiments to supplement gaps in data and information comes up constantly with many of the interviewees. Consider the following excerpts from the BI&A leader (PAR5) of ORG4:

"Skills and expertise on modelling and experimentation are some of the things we are building centrally ... for experimentation, I have a small team - there are 2 teams - one is a strategic projects team and the other is a data science team with specific skillsets like machine learning, location ... we are running at least 20-30 experiments - test & learn campaigns ... validating whether it works or doesn't work ... 60% work, 40% don't work [say] ... that's really helping us fine-tune and helping us continue to build ... it's ok to try different things; it's ok to do a lot of experiments to know. And then you scale out. Because we don't like to fail."

And a similar remark from the BI&A leader (PAR22) of ORG3:

"Yes, that's why we should do lots of test / experiments since we cannot find the answers from our existing data ... I think it comes down to practice and experimentation. The analysts must have the opportunity to keep trying different kinds of solution to learn."

Running experiments consume time, effort and the possibility of losing profit opportunities due to delays. Not all business stakeholders have the proclivity or

appetite for experiments in the face of profit pressures. Fortunately, the BI&A leader (PAR18) of ORG7 has the support and trust of her senior business stakeholder (PAR17) as illustrated in the excerpts from the latter below:

"Because many of the decisions we make now require a lot of infrastructure build-up, logistical build-up, training and so on. They cost a lot of money and resources. So, I have to be sure. And the only way I can be sure is through data. Without data, I am very uncomfortable. When there's an absence of data, I can experiment. And when I start experimenting, I start gathering data ... for example, we were working on an initiative to give loans to overseas Filipino workers. We didn't know how much data we had. I told [BI&A leader] what I wanted to make happen ... she came back and gave me this fancy and really great analytics to show for starters at least what data we had to work on. And that gave me a reality check. Once I know how much information I had, I then told them to start investing in getting more data through experiments. [BI&A leader] then advised me on how best to approach this ..., the more certainty I think I have, the more I'm willing to take a risk on the execution idea ... so I feel more comfortable since it is way better than a guess. It's a very informed decision. It's more calculated and we could manage our risk-returns."

The BI&A head (PAR18) had only been with ORG7 for just under a year at the time of this interview. She had started the BI&A function from scratch, and have enjoyed tremendous success despite high levels of initial scepticism displayed by the senior leadership (as described by both the BI&A leader and the senior

business stakeholder). This early success was in part due to the openness of the senior business stakeholder to embrace a more deliberate and matured approach to BI&A activities, including the need for experimentation.

4.5. BI&A Organisation Design

From the interviews, I note that the activities within a BI&A function can be clearly demarcated into 2 major categories. The first category of activities (denoted by Cat1) is centred around data and information *sense-making*. According to Klein et al. (2006), sense-making is "an active two-way process of fitting data into a frame (mental model) and fitting a frame around the data" (Wikipedia). This is very much akin to the collective BI&A activity of translating a business problem into a data problem, and translating a data problem into a data solution. The second category of activities (denoted by Cat2) is centred around data and information *management*, and this resonates with translating a data solution into a business solution.

The common BI&A activities in Cat2 are data preparation, data quality assurance, information reporting, campaign execution and fulfilment, model validation and maintenance. These activities are characterised by their routine and repeatable nature; they are highly procedure- or rule-oriented.

The common BI&A activities in Cat1 are data mining, campaign design, experimental design, segmentation modelling, predictive modelling, optimisation

modelling. These activities are less routine and repeatable, and are obviously more equivocal in nature. Figure 6 below summarises the key differences between Cat1 and Cat2 BI&A activities.

Data & Information Management

- Characterised by routine & repeatability; highly procedure- or rule-oriented
    - Data preparation
    - Data quality assurance
    - Reporting
    - Campaign execution
    - Model maintenance

Data & Information Sense-Making

- Characterised by less routine & repeatability; more equivocal in nature
    - Data mining
    - Campaign design
    - Experimental design
    - Segmentation modelling
    - Predictive modelling
    - Optimisation modelling

Figure 6: Data & Information Management versus Data & Information Sense-Making

The 11 organisations covered in the in-depth interviews have pursued different permutations in organising the resources in their respective BI&A function around both these categories of activities. In some organisations, the BI&A resources may handle data/information management contiguously with data/information sense-making. In such instances, I define the BI&A organisational model as *Generalist*. On the opposite spectrum, some organisations have a clear separation of BI&A resources handling Cat1 versus Cat2. I define this BI&A organisational model as *Specialist*.

Table 12 below summarises how each of the 11 BI&A functions have organised themselves:

ORG Code	Reporting Structure	Proxy IT	Data & Info Management	Data & Info Sense-Making	Model Classification
ORG1	BI&A reports into Customer Experience (CE) department CE reports into Group CEO	BI&A supported by Enterprise Information Systems team (part of IT)	Self-help reporting for business stakeholders	Centralised line-of-business (LOB) sub-teams Offshore support team	Specialist
ORG2	BI&A reports into Marketing department Marketing reports into Consumer CEO	Data infrastructure team (1 person)	Centralised LOB sub-teams handling analytics, campaigns & reporting		Generalist
ORG3	Country BI&A reports in Customer Franchise (CF) department CF reports into Consumer CEO Similar reporting line for Regional BI&A into Regional CF	BI&A supported by datawarehouse team (part of IT) Data Capability lead to oversee data quality	Centralised offshore team for reporting In-country Data Capability lead to interface with offshore In-country centralised campaign management team	In-country LOB sub-teams	Specialist
ORG4	Country BI&A reports into Country Consumer CEO Regional BI&A reports into Regional Consumer Chief Operating Officer	Data Structure team	Centralised campaign execution team in country Outsource offshore team handling data preparation	In-country LOB sub-teams	Specialist
ORG5	Monoline business model Cards BI&A head reports into Country Cards head	None	Campaign management team Reporting done by Finance department	Single analytics team (monoline)	Specialist
ORG6	BI&A reports	Capabilities	Forensics	Campaign	Specialist

	into Product & Marketing (P&M) department P&M reports into Consumer CEO	Development team to build data assets Information Leadership team to monitor data & analytics platform Offshore team in Manila handling data quality	Analytics team (offshore) Operations team handling reporting and campaign execution Business Intelligence team facilitating self-help reporting	Innovation team handling campaign design Advance Analytics made up of LOB sub-teams handling analytics Engagement, Strategy & Insights team coordinates business alignment and change management Analytical Marketing team handles marketing content Offshore team provides support for Operations team	
ORG7	BI&A reports into CEO	Infrastructure team Centralised reporting team Centralised campaign management team	Centralised LOB sub-teams Centralised modelling sub-team	Specialist
ORG8	BI&A reports into Group Strategy & Performance Management (GS&PM) department GS&PM reports into Group CEO	Infrastructure team	LOB sub-teams handling analytics and reporting Campaign management team handling design & execution of campaigns Credit Risk Analytics team	Hybrid
ORG9	BI&A reports into Consumer CEO	Data Architecture team (part of IT)	In-country centralised Data & Information Management (D&IM) team handling reporting	In-country and multiple offshore locations for Analytics team In-country centralised	Specialist

			In-country centralised Customer Relationship Management team partners with D&IM for campaign execution	Customer Relationship Management team partners with Analytics for campaign design	
ORG10	BI&A reports into Consumer CEO	Outsourced for data prepping and mapping, including acquisition of 3rd party data	Centralised reporting team Centralised campaign execution team	Decentralised LOB sub-teams	Specialist
ORG11	BI&A reports into Customer Experience & Analytics (CE&A) department CE&A reports into Consumer CEO	Analytics Infrastructure Reporting & Campaign Management team (tool enablement only)	Centralised LOB sub-teams handling analytics, campaigns & reporting Dedicated modelling team not under BI&A due to legacy		Generalist

4.5.1. Generalist versus Specialist

The common BI&A organisational model is the Specialist design, with 8 out of the 11 (73%) organisations interviewed favouring it. A standout exception is the Hybrid model for ORG8. In this organisation, the BI&A resources are split into 3 main specialist group: Analytics & Reporting, Campaign Management, Credit Risk Analytics. However, the Analytics & Reporting group is a Generalist set-up as they engage in both CAT1 and CAT2 activities.

During the interview process, it was observed that the choice of Generalist or Specialist organisational model is intimately related to the overall level of BI&A

maturity within the organisation, and more specifically, with the level of maturity and sophistication of the BI&A function.

Most BI&A functions adopt a Generalist model when they first begin. However, they soon realise two things. Firstly, that the Data & Information Management activities consumes a disproportionately larger percentage of the BI&A resources, leaving little room for the BI&A function to develop their Data & Information Sense-Making capabilities. And It is this Sense-Making capability that generates significantly greater value for the business stakeholders as intimated in the interviews. Secondly, that the skillsets and competencies needed for Data & Information Management and Data & Information Sense-Making activities are quite different and not altogether interchangeable.

Introducing the Integrator role is one of the next move that BI&A functions then pursue. This usually go hand-in-hand with a move towards the specialist model where the Data & Information Sense-Making activities are explicitly separated out with dedicated full-time BI&A resources. This move increases the discussions and interactions between the business stakeholders and the BI&A function around present and pertinent business challenges and thus increases the BI&A function's capability to deal with problems of an equivocal nature.

For larger organisations, the BI&A resources within Data & Information Sense-Making are further composed of one or more 'talent pods'. Each talent pod is a grouping of BI&A resources to support one or more lines-of-business (LOB). The

LOB is dependent on how the overall organisation has organised itself. Heading up each of these talent pod is an Integrator. Figure 7 below shows how a typical talent pod is structured.
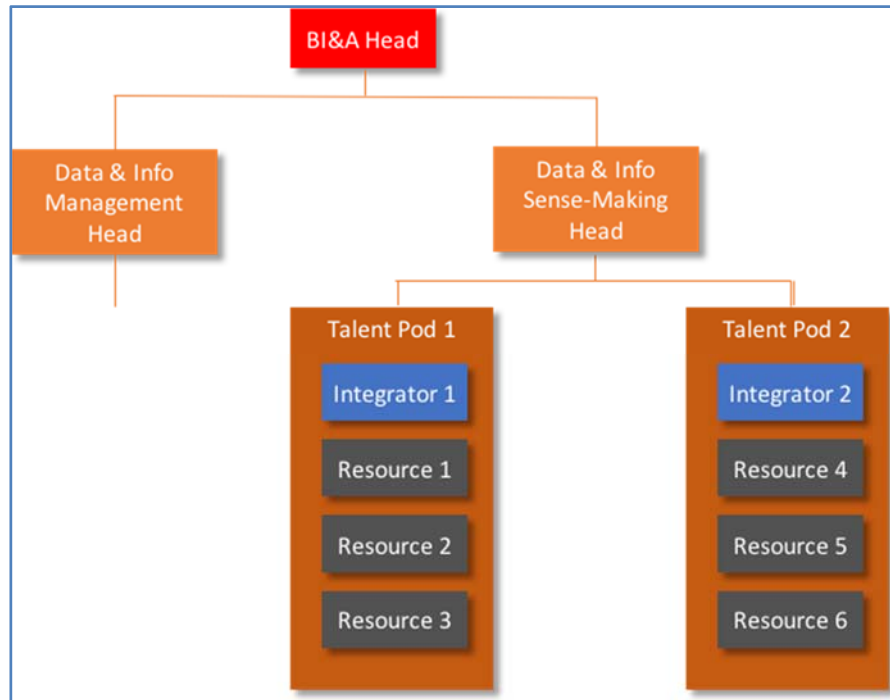
Figure 7: Example of BI&A organisational construct with talent pod

Talent pods often attend meetings together thereby reducing fidelity loss in information transmission. A talent pod allows context-specific domain knowledge to be retained and 'institutionalised' within the team, speeding up the process of problem recognition within the pod.

Some BI&A functions further sub-divide their resources in the Data & Information Management group to create dedicated focused reporting and campaign management activities. There is typically a 'pecking order' with the

more junior resources dedicated to the reporting activities; reporting activities are less uncertain and significantly less equivocal.

As the BI&A function continues to mature, the use of advanced modelling techniques becomes increasingly important. Within that practice, predictive modelling is a common and valuable pursuit in solving uncertain problems. Some BI&A functions create dedicated resources to support such activities as exemplified by ORG6 and ORG7.

The observed 'evolutionary' development of these BI&A organisation constructs therefore leads me to put forward my fifth proposition in this paper:

P5:   *Organising the activities in the BI&A function into specialist roles that are centred around uncertainty and equivocality reduction will increase the BI&A function's capability to address both equivocal and uncertain problems*

The results from the interviews as detailed Table 13 below show strong support for this proposition.

Table 13: Summary of support for Proposition 5 based on coded interview responses

Response	BI&A Leader	BI&A Practitioner
Agree	11 (92%)	5 (100%)
Disagree	1 (8%)	0 (0%)
TOTAL	**12 (100%)**	**5 (100%)**

The initial conceptualisation of Proposition 5 originated from Kowalczyk and Buxmann's (2014) adaptation of Daft and Lengel's (1986) continuum of structural mechanisms to deal with equivocality and uncertainty in the context of BI&A activities (Figure 4). The in-depth interviews validate it. The recognition of equivocality, and the need to reduce it before addressing the issue of uncertainty is key to the effectiveness of the BI&A function as it matures its capabilities. Kowalczyk and Buxmann's framework (Figure 4) can therefore be incrementally modified to highlight this 'movement'. Figure 8 shows the primary modification where the diagram is read from left to right, with the central arrow indicating the need to first reduce equivocality before finally reducing uncertainty as the BI&A function engages in data-driven problem-solving activities.
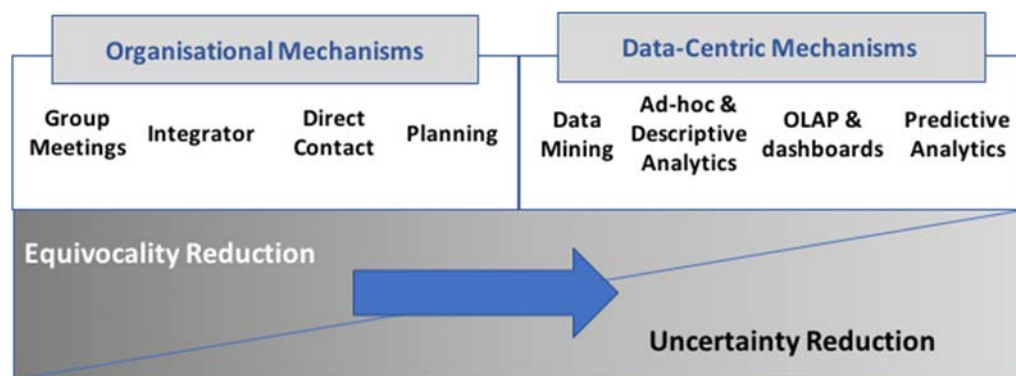
Figure 8: Modified Kowalczyk & Buxmann's Structural Mechanisms for Reducing Uncertainty or Equivocality in BI&A-supported decision processes

ORG1 is arguably one of the more matured BI&A function amongst the 11 organisations covered in the interviews. This is based on a personal assessment the BI&A function's understanding of its role and contribution to the success of the organisation, and its ability to establish and earn the trust and admiration of its

business stakeholders. In the interviews, the BI&A leader from ORG1 (PAR1) shared a most interesting insight:

"… in our old model people were specialists. I am the analyst guy or the MIS [reporting] guy as you said. I'm a campaign guy. And I'll work across all the different client groups on the analytics. But people eventually say I can't be [doing this] my whole life, I'm going to get bored. I want to interact with the business, I want to learn how to build models. I want to learn how to build QlikView reports. So, our verticals are not functional [based], they are client based. So, you might sit in the wealth vertical but you will do the analytical roles across the entire spectrum. You will meet the business, you will build the model, you will run the campaign, you will do the MIS report afterwards, you might build the QlikView report. By vertical we mean you are dedicated to one group of clients … in the last three years [we] have been cross-skilling our guys so that they can do all these things. So, when you meet the customer, you'll understand his problem and end to end you solve that problem, rather than building a little piece and then throwing it to someone else."

The BI&A function of ORG1 is currently transiting from a Specialist model; it is beginning to dismantle it in favour of a Generalist model instead. While this idea was not explicitly tested with the other interviewees, the move (back) towards a Generalist model as the BI&A function matures makes sense when you consider that ORG1 has invested heavily in automation and self-help, resulting in more of the Data & Information Management activities moving into the hands of the end-

user and the overseas offshore support unit. With such automaton and support, a seasoned BI&A CAT2 (specialist) resource should logically expand his/her responsibilities to encompass the end-to-end scope of translating a business problem into business solution. This would be a possible logical end-state of a mature BI&A function.

4.5.2. Offshoring

Offshoring relates to setting up BI&A resources in a separate geography away from the nexus of control and decision-making. For my dissertation, the offshore definition includes outsourcing (i.e. third party providers).

During the in-depth interviews, offshoring was a contentious and polarising topic. Both BI&A leaders and business stakeholders showed mixed support. 25% of BI&A leaders and 50% of business stakeholders interviewed were not supportive of offshoring. In comparison, 33% of BI&A leaders and 13% of business stakeholders were strongly supportive of offshoring; they were keen to offshore both CAT1 and CAT2 BI&A activities. The remaining BI&A leaders (42%) and business stakeholders (37%) showed partial support – they were only prepared to offshore only a subset of CAT2 activities that were deemed as highly operational and repetitive.

Of the 11 organisations covered in the in-depth interviews, 5 of them (45%) have offshored BI&A activities. The offshore locations were either in China or India.

While cost arbitrage was cited as a key driver for offshoring, the choice of geographic location was also based on availability of talent. And this leads me to an interesting observation. The bulk of the BI&A activities that was being offshored was related to data preparation and reporting – subsets of the Data & Information Management category (CAT2). The common thread of these offshored activities was that they were unambiguous and repeatable; the term 'low value' was often used to describe these activities by the interviewees. But the offshore talent hired to perform these activities seem disproportionately highly-skilled, with many having post graduate degrees in STEM (science, technology, engineering, and mathematics) subjects. The lack of proximity to the business stakeholders and the decision-making process was cited as a key issue in offshoring higher value (and more equivocal) work – the offshore talent rarely had direct interaction with the onshore business stakeholders. This mis-match of expectations for the hired offshore talent seems obvious, and may be a contributing factor to the generally higher talent attrition rate cited (during the interviews) for these locations. (A full study of the dynamics of these offshore locations is not within the scope of this research.)

Coupled with the cost advantage narrowing, many of those interviewed shared their concerns in being able to scale up their offshore resources. Consider the comments from the BI&A leader (PAR1) of ORG1:

"... the plan originally was effectively we would keep building up Chengdu and it would probably be a 50/50 [mix]. But over time, I've gone away from

that idea. Because the cost in China is rising so quickly ... And I just find that the disconnect with the remote team is much harder than having someone who's on the ground whom you can brief face-to-face, whom you can iterate with, and you can sketch together. And also on the people development side ... eventually with Chengdu, you top out with what you can learn. You can learn your technical skills, but because you're not interfacing with the business, you don't learn that side of it. And so, I think that there's a kind of natural limit to offshoring and what they can do, and what they can add value in."

Cultural and language barriers also play prominently to the list of issues highlighted. Instructions were being mis-interpreted and mis-understood, leading to delays and re-work, and a noticeable increase in irrelevant or incomplete output. The comments from a senior BI&A practitioners (PAR3) of ORG1 highlights this:

"... we [onshore team] do have the advantage of having some context, but they [offshore team] don't ... I am going to tell you to do 'A', and hopefully you will give me 'A'. And sometimes they will come back with 'B'. Sometimes they will come back with 'C'."

These issues and concerns were similarly echoed by Banerjee & William (2009) in their case study analysis of an India offshore analytics organisation. But despite these, a few of the BI&A leaders interviewed were keen to revisit the potential of offshoring. Consider the comments from the BI&A leader (PAR19) of ORG9:

"I think a little differently. I cannot give them high-end work at this point in time but I do really want to give them high-end work at some point in time. I really want to do that. And I believe I can do that by giving them time to grow and flourish. So, I tell my offsite guys - use this period of time to build you knowledge and your skillsets, layer by layer. Your data knowledge, your product knowledge, your business process knowledge, your business context knowledge. I remind them that they are on this trajectory. Once they get to the layer of business process knowledge, I'm ready to let them talk and interface directly with the in-country business counterparts."

The views from the business stakeholders were similarly bifurcated. Those who support it saw it as an opportunity to reduce the operating expense of the BI&A function while gaining access to better quality talent. But despite their support for offshoring, these business stakeholders were explicit that the business interface portion of the BI&A function should remain onshore. Consider the comments of the business stakeholder (PAR11) of ORG5:

"So, for countries like India or China, they have a bigger and better talent pool than what we have in decision science team today. They have lack of market understanding, but their technical skillset in modelling and data management and campaign is far, far better than what we have. Today, we have a problem with building good models. And the cost in Singapore is such that you can hire 5 guys in the other countries for the 1 you have in Singapore.

So purely from a business and practical standpoint, it makes sense to offshore. There will be some issues with communication and connecting with the people when we offshore. Having a person right beside you does matter, but in a global world today, I think we can find solutions around. If I had to look at it, decision science would be my top priority for offshoring / outsourcing ... The head of decision science and probably 1 or 2 guys can still be in-country, and the rest of them can be offshored / outsourced. So, the in-country people will act as the medium to understand the business and working with the offshore / outsource team to get the desired output."

50% of the business stakeholders interviewed were not supportive of offshoring. They spoke of the negative outcomes of past offshoring initiatives with previous organisations. Take the comments of the business stakeholder (PAR16) of ORG2:

"Because a lot of people are thinking of offshoring to India, or Malaysia, or whatever the case may be. This offshoring only works for what I deem to be the non-intelligent part of analytics - the preparation part. But to make sense of it [data], you need someone very close to the business. And the hypothesis method is always better. But to formulate hypotheses, you need the domain knowledge. To do from bottoms-up, looking for patterns purely from the data and finding the opportunities ... you can't do that as the business will tell they already know these 'patterns', and it's not interesting."

Table 14 below summarises the views of the interviewees on offshoring:

Table 14: Summary of views on offshoring from interviewees

ORG Code	Offshore	Offshore Attributes	BI&A Leader	BI&A Practitioner	Business Stakeholder
ORG1	Y	Data preparation, reporting and campaign production with some modelling. Located in China.	Can't offshore complex problems that require a lot of iterative interactions with the business. Can't scale up to replace onshore BI&A team. Cost advantage narrowed.	Loss of business and problem context. Loss in translation / language barrier. Good for load balancing (seasonality). Prefer to hire locally if there is no cost advantage.	Supportive of offshoring so long as cost ratios are favourable and quality of output is not impacted.
ORG2	N	Not applicable	Supportive of offshoring due to cost and talent availability.	Not applicable	Not supportive of offshoring other than the 'non-intelligent' parts of BI&A.
ORG3	Y	Reporting, campaign execution and modelling. Located in India.	Comments from 3 country BI&A leaders. MY: supportive of offshoring of reporting only. SG: supportive of offshoring all activities. ID: Supportive of offshoring only simple reporting and campaigns.	Comments from 2 practitioners. #1: not supportive of offshoring. #2: supportive of offshoring reporting and campaigns only.	Comments from 2 business stakeholders. MY: supportive of offshoring so long as cost ratios are favourable and quality of output is not impacted. SG: does not see the long-term value of offshoring. Wants to replace with AI instead.
ORG4	Y	Data preparation. 3rd party outsource agency. Located in India. Hard-pairing of offshore and onshore analysts.	Supportive of offshoring low-value work such as data preparation.	Not applicable	Does not believe in offshoring. Prefers to focus on regional Centre of Excellence to facilitate best practice sharing.

ORG5	N	Not applicable	Not supportive of offshoring.	Not applicable	Strongly supports offshoring, but those activities that require significant business stakeholder interaction must remain onshore.
ORG6	Y	Data preparation and forensic analytics. Located in China.	Supportive of offshoring due to access to greater talent pool.	Not applicable	Not applicable
ORG7	N	Not applicable	Not supportive of offshoring, but prepared to consider the possibility of offshoring work that is repeatable and straight-forward.	Not supportive of offshoring, but prepared to consider the possibility of offshoring work that is repeatable and straight-forward.	Not keen to offshore. But open to consider the possibility if BI&A function has achieved high credibility with the business stakeholders.
ORG8	N	Not applicable	Not applicable	Supportive of offshoring data management and campaign management activities; which doesn't require significant interaction with business stakeholders.	Supportive of offshoring those BI&A activities that doesn't require business stakeholder interactions, are not equivocal or ambiguous, or require sufficient business domain knowledge.
ORG9	Y	Currently focused on low-end data & info sense-making work with a view to growing into handling higher-end activities	Supportive of offshoring due to access to greater talent pool.	Not applicable	Not applicable
ORG10	N	Not applicable	Prepared to outsource or offshore data preparation work only.	Not applicable	Not applicable
ORG11	N	Not applicable	Not supportive of offshoring due to cultural differences.	Not applicable	Not applicable

4.5.3. Hub & Spoke

Each of the BI&A function interviewed were continuously experimenting with their organisation design to improve their capabilities and capacity to deal with both equivocal and uncertain problems. Many share a similarity where they have bifurcated their BI&A resources into 2 large camps – data & information sense-making and data & information management. Amongst the larger organisations, some of them have already implemented or are considering implementing a 'distributed' BI&A organisation design to better support the increasing complexities through better access of talent and keeping cost at bay. Such a distributed design entails leveraging resources across multiple locations and geographies, including offshoring. Hence, the discussion on offshoring throws critical insights on the effectiveness of such a distributed organisation design.

One such distributed design is the 'hub & spoke' model. The 'hub' represents the centre or nexus of the BI&A function where strategies are formulated and major decisions are made. The 'spoke' represents one or more satellite sub-functions that is purpose-built for a defined set of BI&A capabilities. Consider the simple illustration where you have the administrative aspects of the function housed within the country where the organisation's headquarters is located, and separate spokes for data management, predictive modelling, design of campaigns and experiments, etc. located in different countries across the globe where the intersection of cost and talent makes good economic sense.

Now, based on Propositions 2, 4 and 5, I surmise that a hub & spoke model where BI&A resources supporting equivocal-reduction activities are in the hub, while BI&A resources supporting uncertainty-reduction activities are in the spokes would be a logical and good fit for improving the overall capability and capacity of a BI&A function.

Proposition 2 states that physical proximity (to business stakeholders) is important in the engagement of equivocality-reducing activities. Proposition 4 states that physical aggregation of BI&A resources is important in the engagement of uncertainty-reducing activities. And Proposition 5 states that specialisation of BI&A roles that are matched to uncertainty and equivocality reduction activities is effective. Combining these 3 propositions gives rise to my final and 6th proposition:

> *P6:*   *Aggregating resources engaged in uncertainty-reduction activities while co-locating those resources engaged in equivocality-reduction activities with the line-of-business that the function supports will increase the BI&A function's capability to address both equivocal and uncertain problems.*

Given the lack of strong support for Proposition 4, and the insights on the effectiveness of offshoring, it is no surprise therefore that Proposition 6 finds a lack of strong support – only 58% of BI&A leaders agree with it. Table 15 below provides a summary of the responses from both BI&A leaders and BI&A

practitioners. The proposition was not posed to the business stakeholders as they would not be able to make a fully informed assessment of the their BI&A functions.

Table 15: Summary of support for Proposition 6 based on coded interview responses

Response	BI&A Leader	BI&A Practitioner
Agree	7 (58%)	0 (0%)
Disagree	5 (42%)	2 (100%)
Indeterminate	0 (0%)	3 (0%; not included)
TOTAL	**12 (100%)**	**5 (100%)**

The proposed design of the hub & spoke model as articulated in Proposition 6 is clearly not resonating strongly with the BI&A leaders and practitioners. Some key insights as to why this may be the case can be found in the following comments below from the BI&A leader (PAR22) and senior BI&A practitioner (PAR9) of ORG3, respectively. They reveal that sufficient equivocality occurs within the data & information management activities, and having a distributed organisation structure leads to increased homogeneity and isolation, resulting in a loss of context across the value chain of translating a business problem into a business solution.

"For the small-scale campaigns and MIS, it's been useful to offshore as the in-country effort is not worth it. But for the more complex campaigns and MIS, we end up spending more time explaining the logic and business background to the offshore team … Such complex campaigns and MIS require discussions with the business, and that's easy to do in-country. Now we have to

accommodate all parties' points of view, and it doesn't always lead to resolution."

"The guys we have in [India] are fresh out of college with Masters degrees, with high marks and very analytical, but they have no business understanding. Putting them alongside other PhDs has no benefit as they [the new hires] already know how to do it, but there's no one there to impart business knowledge."

5. Conclusion

This dissertation yields important theoretical and practical contributions. While the interview study had a limited sample size, all participants were either practitioners of the BI&A discipline, or had direct interaction with the practice and could therefore speak of it with credibility. Expanding on the grounded theory derived herein and applying it across a broader range of industries and validated through a quantitative study would be the desirable next steps.

5.1. Theoretical Contribution

Very little has been written about the organisation design aspects of a BI&A function. No theoretical framework exists. This work therefore makes an important contribution by highlighting the key considerations when designing a successful BI&A function.

The first important consideration is that the BI&A function needs to be designed to address *both* equivocal and uncertain problems. The fast-growing practice of BI&A is clearly a subset of the broader discipline of information processing, but despite the acknowledgement of the phenomenon of uncertainty and equivocality in information processing as well-expounded in Daft & Lengel's often-cited 1986 paper, most BI&A functions do not explicitly address this phenomenon in their organisation design. This has led to sub-optimal BI&A outcomes as widely publicised in both academic and practice literature. In my research, I have found

strong support for the presence of equivocality in BI&A activities; uncertainty is obviously present given the data-oriented nature of BI&A activities.

The next important contribution are the moderating organisational design variables. I started this dissertation with a simple theoretical framework on the moderating effects of hierarchical distance, physical proximity, centralisation and specialisation on a BI&A function's capability to address uncertain and equivocal problems. In my research, I have found strong support for the moderating effects of hierarchical distance, physical proximity, and specialisation. However, I did not find strong support for the moderating effects of centralisation. This lack of strong support might be explained by the presence of sufficient equivocality even in BI&A activities deemed as primarily of an uncertainty nature.

Thirdly, this dissertation yielded new insights on how equivocality occurs in the practice of BI&A through the pathways that the practitioners take to solve business challenges using data and analysis. The research led to the proposed 'transmutation' framework where BI&A practitioners first translate a business problem into a data problem, and then translate the data problem into a data solution, and finally translate the data solution into a business solution. This 'transmutation' framework is key to understanding the role the moderating variables play in influencing a BI&A function's capabilities to address equivocal and uncertain problems.

5.2.   Practical Contribution

How should a BI&A function organise itself? My dissertation makes important contributions to this very practical aspect. Not surprisingly, my research confirms that contextual domain knowledge, or access to it, is critical for addressing equivocality in problem-solving. And based on the transmutation framework, my research further reveals that while equivocality occurs throughout the entire process, it is highest during the initial translation of a business problem into a data problem. As such, those BI&A resources that engage in such activities must be hierarchically and physically proximal to the key business stakeholders where the articulation of the business problem originates from for the BI&A function to develop and gain access to the necessary contextual domain knowledge to both recognise and address such equivocality.

My research also highlights that dividing the BI&A activities and associated resources to match the continuum of equivocality and uncertainty significantly improves the BI&A function's capability. In particular, my research reveals that the activities within a BI&A function can be clearly demarcated into 2 major categories – data and information sense-making (CAT1), and data and information management (CAT2). The activities in CAT1 have more equivocality, while the activities in CAT2 possess more uncertainty.

Organisations may find themselves at the phase of starting up a BI&A function or re-organising an existing one. The below outline summarises the key considerations in creating an effective BI&A function:

1. Recognise that BI&A is more than a data-oriented discipline. Rather, it should be decision-oriented. It should be focused on business outcomes and impact by improving the speed of decision-making and the quality of decisions. To achieve this decision orientation, these outcomes and impact need to be actively defined and measured as part of the function's key performance and success indicators.

2. The organisation must support BI&A through a top-down mindset and cultural change. Senior management must *'ask for evidence'* during its decision-making process, and re-enforce it by requiring *'independent corroboration'* of the evidence by the BI&A function.

3. Senior management must *'raise the visibility'* of the BI&A function by having them participate in strategic and senior management meetings and discussions. This sends a message across the organisation that the BI&A dimension is a key consideration at the onset of any major strategic imperatives and critical business challenges.

4. In creating or re-aligning the BI&A function, it is important that the head of the function is part of the senior management team (of the business division that it supports). This ensures that the BI&A function has access to important background and contextual information around the business challenges that the BI&A function may be asked to work on.

5. Organise the members of the BI&A function into 2 broad teams – Data & Information Management, and Data & Information Sense-Making. The skillsets, competencies and experiences required for each of the team are different. Those with the most business domain experience and knowledge should be placed in the Data & Information Sense-Making team. These are the ones most likely able to translate a business problem into a data problem; these are the ones most likely to have the capability to reduce equivocality in their BI&A activities.

6. If there are multiple lines-of-business that the BI&A function supports, create sub-teams (i.e. talent pods) within the Data & Information Sense-Making team that is dedicated to one or more of these lines-of-business.

7. Introduce the role of the Integrator(s) to lead each of the sub-teams of Data & Information Sense-Making. The Integrator 'manages' the relationship (and expectations) of the line-of-business stakeholders, and represents the common point of interface for the BI&A sub-team to translate a business problem into the end-state business solution.

8. Co-locate the Data & Information Sense-Making sub-teams with the line-of-business that they support to maximise face-to-face iterative interactions with their business stakeholders.

9. Ensure that the Data & Information Management team build strong partnerships with internal Information Technology (IT) functions who have access to data. Data is the foundational core of BI&A activities. This team can be centralised to gain scale and efficiencies.

My research also reveals the shortcomings of pursuing a distributed organisation model, in particular, offshoring. Offshoring of BI&A activities to geographies with better cost advantages and adequate talent is increasingly popular. However, it is not necessarily in the best interest of creating a successful BI&A function. There are significant limitations in offshoring activities beyond the simple and repeatable ones in CAT2 due to the presence of equivocality, lack of contextual domain knowledge and misinterpretations arising from cultural and language differences.

5.3.   Recommendation for Further Research

This study focused on the BI&A function within the consumer banking industry in South-East Asia. While it covered banks of different sizes, and included both local domestic and multi-nationals, subsequent studies could do well to expand the coverage to other industries where BI&A activities (and thus the need to organise them) feature significantly, such as Telecommunications and Retail (including e-Commerce). In such an expanded study, it would be important to supplement it with a *structured quantitative study* to measure the strength of the influencing

moderators and their possible inter-dependencies. This would provide an opportunity for additional statistical validation of my proposed grounded theory.

Another area of future inquiry is to do a deep-dive study into alternate models for a distributed / offshoring construct of the BI&A function. This would have significant theoretical and practical merits to the BI&A discipline and community. For example, is there benefit to consider a more diversified, subject-matter-oriented talent in the offshore locations to counter the current loss in ability to handle equivocal problems? Could offshoring be designed as an internal ecosystem of 'connected' multiple locations for knowledge and task sharing?

A longitudinal study on the evolution of the BI&A function is also an area left wide-open for future research. No such study exists today. Such a study should incorporate the impact of artificial intelligence (AI) and machine learning on equivocality and uncertainty reduction in problem-solving as these are critical emerging BI&A methodologies re-shaping the way business and BI&A bisect.

In summary, future research should focus on expanding industry and geographic coverage, expanding the grounded theory to encompass alternate models of a distributed BI&A function, measuring the strength of the moderating variables, and understanding how the organisational structure of the BI&A function evolves and matures over time in response to changing trends and new BI&A practices.

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Appendix A: Interview Questionnaires

Questionnaire for BI&A Practitioners & Business Stakeholders version 1

Key Propositions to Explore

Study 1 is a qualitative study consisting of in-depth interviews with business leaders and practitioners of business analytics. Its purpose is to obtain a diversified perspective on how BI&A functions are designed to handle uncertain and equivocal (ambiguous) problems, and the mechanisms employed to achieve success in problem solving.

Uncertain problems are these class of problems in which uncertainty can be reduced through the acquisition of more data. A typical example of an uncertain problem is predicting loan delinquency / credit scoring - the more data one has on a customer, the more one is likely to predict the likelihood of loan delinquency. A typical example of an equivocal problem is the decision response to a competitor bank launching a new credit card – gathering more data doesn't necessarily provide a better solution; rather it is convergence of interpretation that's required.

Little is known about the organisation design principles that lead to an effective organisation. Some organisations have explored strategies on centralisation, offshoring, co-location, etc. but little is known about the outcomes. My research seeks to shed light on these organisation design principles by viewing it through the lens of uncertainty reduction and equivocality reduction in problem solving.

Structure of the Interview Questionnaire

The interviews will be open-ended, with the questionnaire serving as a guide. The focus of the interview is to solicit the interviewees' views on BI&A organisation design and its implications to the function's efficiency and effectiveness. I am seeking to understand how the BI&A organisation interfaces with the relevant line-of-business (LOB) to solve different types of business problems. There will be 2 sets of questionnaires - for BI&A practitioners and business leaders.

Interview Questionnaire

Introduction Section

1. What is your background and work experience?
2. How many years (approximately) have you had working in BI&A or interfacing with BI&A teams?
3. What does BI&A mean to you or to your company?

BI&A Practitioners' Section

4. Who and which function does the BI&A team report into, and why?
    a. Does the head of the BI&A function participate in senior management meetings?

     b.   Are you satisfied with the current reporting structure of your BI&A team? If not, where should the BI&A team report into?

5. How many years have your BI&A team been established?
6. Which line-of-business (LOB) does your BI& team supports?
7. How is your BI&A team organised?
    a.   What is the size of the team?
    b.   What kinds of sub-teams do you have, and why?
    c.   Describe the roles and responsibilities of the team
    d.   Is the team physically co-located with the LOB or is it centralised in a separate location?
8. What are the backgrounds (i.e. competencies and work experiences) of your BI&A team members, and the kinds of business problems that they have been working on?
9. What kinds of business problems does your BI&A team work on?
    a.   Is there a lot of variety in the types of business problems?
    b.   Is the nature of the problems explicit or they often ambiguous? Is it clear what is required of your team? Please elaborate a few examples.
    c.   Are there possible multiple interpretations and solutions for the problems? If so, how does your team deal with these ambiguities? Please elaborate a few examples.
    d.   Describe the activities that your team engages in to solve these problems. Is there a standard prescribed set of actions?
10. Describe the measures of success for your BI&A team; how is it being evaluated?
    a.   How often do you get criticised for inaccurate intelligence?
    b.   How often do you get criticised for irrelevant intelligence; meaning that it did not address the problem?
11. In what areas do you wish the BI&A team to be more involvement in?
12. What steps can you take to improve the situation?
13. What areas has your BI&A team created the most impact? Can you provide some highlights on the impact?
14. Is your BI&A team supported by additional external or offshore resources?
    a.   If so, are these additional resources meeting your expectations?
    b.   If not, in what context would you consider offshoring?
15. If you had to put together a BI&A function again, what would you do differently? For example, where and who should it report into? How should the team structure be organised? What would be the scope of the function?

Business Heads' Section

4. Who and which function does the BI&A team report into, and why?
    a.   Does the head of the BI&A function participate in senior management meetings?
    b.   Are you satisfied with the current reporting structure of your BI&A team? If not, where should the BI&A team report into?
5. How many years have your BI&A team been established?
6. Which line-of-business (LOB) does your BI& team supports?
7. How is your BI&A team organised?
    a.   What is the size of the team?
    b.   What kinds of sub-teams do you have, and why?
    c.   Describe the roles and responsibilities of the team

      d. Is the team physically co-located with the LOB or is it centralised in a separate location?

8. What is your overall experience in leveraging the BI&A team to solve your business challenges? Are you satisfied? If not, what expectations are not being met?

      a. What types of business problems would you engage your BI&A team to solve?

      b. What types of business problems would you not engage your BI&A team to solve? And why?

      c. Is the intelligence produced by your BI&A team accurate? Describe occasions when it was not accurate and why.

      d. Is the intelligence produced by your BI&A team relevant? Describe occasions when it was not relevant and why.

      e. What are the key business challenges that your BI&A team has successfully solved?

      f. What are the key business challenges that your BI&A team have not been able to solve, and why?

Questionnaire for BI&A Practitioners & Business Stakeholders version 2

Key Propositions to Explore

Study 1 is a qualitative study consisting of in-depth interviews with business leaders and practitioners of business analytics. Its purpose is to obtain a diversified perspective on how BI&A functions are designed to handle uncertain and equivocal (ambiguous) problems, and the mechanisms employed to achieve success in problem solving.

Uncertain problems are these class of problems in which uncertainty can be reduced through the acquisition of more data. A typical example of an uncertain problem is predicting loan delinquency / credit scoring - the more data one has on a customer, the more one is likely to predict the likelihood of loan delinquency. A typical example of an equivocal problem is the decision response to a competitor bank launching a new credit card – gathering more data doesn't necessarily provide a better solution; rather it is convergence of interpretation that's required.

Little is known about the organisation design principles that lead to an effective organisation. Some organisations have explored strategies on centralisation, offshoring, co-location, etc. but little is known about the outcomes. My research seeks to shed light on these organisation design principles by viewing it through the lens of uncertainty reduction and equivocality reduction in problem solving.

Structure of the Interview Questionnaire

The interviews will be open-ended, with the questionnaire serving as a guide. The focus of the interview is to solicit the interviewees' views on BI&A organisation design and its implications to the function's efficiency and effectiveness. I am seeking to understand how the BI&A organisation interfaces with the relevant line-of-business (LOB) to solve different types of business problems. There will be 2 sets of questionnaires - for BI&A practitioners and business leaders.

Interview Questionnaire

Introduction Section
1. What is your background and work experience?
2. How many years (approximately) have you had working in BI&A or interfacing with BI&A teams?

BI&A Practitioners' Section
3. How many years have your BI&A team been established?
4. Who and which function does the BI&A team report into, and why?
5. Which line-of-business (LOB) does your BI& team supports?
6. What does BI&A mean to you or to your company?
7. Does the head of the BI&A function participate in senior management meetings?
   a. What types of meetings does the BI&A function attend?
   b. Describe these meetings and the role that BI&A function play.
8. What decision rights does your BI&A function have?
   a. On what process does the BI&A function have approval authority on?
   b. On what processes must the BI&A function be consulted on or provide its concurrence?
   c. Does the BI&A function own any policies?
   d. Is the BI&A function formally consulted on all business initiatives that require data?
9. How do you define success of your BI&A function?
   a. What are the performance goals of your BI&A function?
   b. Is it aligned to the BI&A function's capabilities?
10. How important is self-help information for your organisation?
11. How is your BI&A team organised?
   a. What is the size of the team?
   b. What kinds of sub-teams do you have, and why?
   c. Describe the roles and responsibilities of the team
12. Is the team physically co-located with the LOB or is it centralised in a separate location?
   a. How do the teams interface with the business and each other?
13. Are you currently outsourcing parts of your BI&A function?
   a. If so, why?
   b. If so, what the benefits you are seeing?
   c. If so, what the challenges you are seeing?
   d. If not, would you?
14. Problems go through this chain of process: business problem gets translated into a data problem; data problem gets translated into a data solution; and the data solution needs to be re-translated back into a business solution.
   a. Where are you experiencing the most (ambiguity) challenge and why?
   b. Describe the activities that your team engages in to solve these problems.
   c. How are you addressing these challenges and have they been successful?

Business Heads' Section
3. How many years has your BI&A function been established?
4. Who and which function does the BI&A team report into, and why?
5. Which line-of-business (LOB) does your BI& team supports?

6. What does BI&A mean to you and your organisation?
7. Is the BI&A function a part of your leadership and planning meetings?
    a. Describe these meetings and the role that BI&A function play.
8. What decision rights does your BI&A function have?
    a. On what process does the BI&A function have approval authority on?
    b. On what processes must the BI&A function be consulted on or provide its concurrence?
    c. Does the BI&A function own any policies?
    d. Is the BI&A function formally consulted on all business initiatives that require data?
9. How important is self-help information for your organisation?
10. How is your BI&A team organised?
    a. What is the size of the team?
    b. What kinds of sub-teams do you have, and why?
    c. Describe the roles and responsibilities of the team
    d. Is the team physically co-located with the LOB or is it centralised in a separate location?
11. What is your overall experience in leveraging the BI&A team to solve your business challenges? Are you satisfied? If not, what expectations are not being met?
12. What types of business problems would you engage your BI&A team to solve?
13. What types of business problems would you not engage your BI&A team to solve? And why?
14. Problems go through this chain of process: business problem gets translated into a data problem; data problem gets translated into a data solution; and the data solution needs to be re-translated back into a business solution.
    a. Where are you experiencing the most (ambiguity) challenge and why?
    b. How are you addressing these challenges and have they been successful?
15. Are you currently outsourcing parts of your BI&A function?
    a. If so, why?
    b. If so, what the benefits you are seeing?
    c. If so, what the challenges you are seeing?
    d. If not, would you?

Appendix B: Coding Scheme for In-depth Interview

Code Family	Code	Rules (words, phrases, sentences or whole responses)
Role	BI&A Leader	BI&A leader
	BI&A Practitioner	BI&A practitioner
	Business Stakeholder	Business stakeholder, line-of-business head
Background	Background	Job, career, past experience, role
Perception	Perception	Response to questions such as: What is BI&A? What does BI&A mean to you? What is the purpose of BI&A?
Proximity	Hierarchical	Reporting line, solid reporting, matrix reporting, report into, "x"-down from CEO, seniority
	Physical	Closeness with the business, location, co-location, in-country, same building, floor, seating arrangement, embedded, regular meetings, water-cooler talk, informal discussion, access, face-to-face, spend time with the business
Organisation Culture	Enforcement	Asking for evidence, use of facts and data to justify, enforce, culture, part of business strategy/process, analytics as key pillar, sponsorship, tone from the top, adoption
	Independence	Independent, neutral, unbiased, no agenda, run the numbers, validate, seeking opinion of analytics, decision rights, approval authority, concurrence, influence
	Visibility	Visibility, leadership meeting, strategy meeting, business planning
Organisation Structure	Structure	Centralised, vertical, horizontal, talent pod, sub-team, RM (relationship manager), layer, integrator
	Activities	MIS, reporting, campaign, data management, data extraction, data transformation, analytics, modelling, segmentation, programming, machine learning, research, ownership, data governance, data quality, advise
	Interaction	Working with, interact, collaborate, partnering, sharing, discuss, transmit, meeting, participate, interface, face-to-face, conference call, video conference, email, messaging, order-taking
	Offshore	Offshore, outsource, extension
BI&A	Outcome	Value, solution, insights, KPI, results,

Outcome		completeness of BI&A output (analysis, information), accuracy of BI&A output, relevance of BI&A output
	Success Measure	Success measure, KPI, credibility, internal client satisfaction, revenue, shadow revenue, add value
Problem Solving	Equivocality	Equivocal, ambiguous, different perspectives, interpretation, framing, hypothesis, lost in translation, contextual
	Uncertainty	Experiment, test, predict, 3rd party data, validating data, data not there/available
	Competency	Technical skills, domain knowledge, vintage, consulting, story-telling, banking knowledge, capability, business knowledge, P&L knowledge
Access	Management Access	Leadership meeting, seat at the table, full access to strategy
	Information Access	Access to data, datawarehouse, self-help

Appendix C: Interview Transcripts

Participant Code   PAR1
Title   Head, Group Customer Analytics & Decisioning
Organisation Code   ORG1
Date   November 3, 2015
Legend   [xxx] implies redacted due to participant confidentiality

Person	Transcription
Eric	Eric thanked PAR1 and explained the BI&A organisation design research.
Eric	So let's start with the introductions and your background.
PAR1	I'm [nationality], I did Applied Maths in Edinburgh from 1990 to 1994, and I chose Maths because it was the thing I enjoyed in school, and I was good at Maths. And I thought, "Hey, not a lot of people are going to choose it, so I've got a good chance of getting a job ...". And it was also the Cold War ... it seems crazy to say you chose a degree because of the Cold War, but Edinburgh was really big on the defence industry ...
Eric	The coding [cryptography] and such …
PAR1	And so I thought I would end up in Marconi or one of these old companies building missile defence systems. But I was lucky that the degree I chose had a lot of statistics, had a lot of coding, you know, C, Fortran, C++. And a lot of mathematical modelling. And so, although it was a Mathematical degree, it had a lot of business focus. It gave me a good understanding of how you could apply the maths to business problems. And as part of that, I got to do a work placement - I spent 6 months in Switzerland working in the nuclear industry, looking at where nuclear waste would be in a million years' time ... which was great. It's all going to be in Germany [jest].
PAR1	So I graduated in 1994. Back then, I was really into Rock. I had really long hair. My life was all about Friday and Saturday nights. I was interviewing for jobs … and they were all serious jobs. And they kept saying "Hey, what about your hair? Cut your hair!" I said, "No, I'm not going to cut my hair, it's more important than the job!" So, I eventually ended up in a call centre doing temp work because no one would give me a job and I just refused to change how I look. I worked there for about 6 months and it was the best 6 months of my life, cause you know it was full of young women ... you're just going out every night and getting 'hammered'. Because I worked in this call centre, which was with Standard Life, and Standard Life was the biggest insurance company in Europe at the time. And this job opened up in Standard Life, which was a coding job - a SAS programmer job; mainframe SAS. And so, I applied for it, because I had the mathematical background and I could do the coding, and I had already worked in the call centre, and so they were eventually willing to take a chance even though I looked like a weirdo. And then ... I was just at the right place at the right time. They were doing mainframe SAS, I was building sales applications, sales tracking dashboards, sales force remuneration, and all the MIS [management information system] for the sales ... you know, how the organisation was

	performing. And so, I was doing mainframe SAS, SAS screen control language, actually building real apps ...
Eric	This was really first generation, pioneering BI [business intelligence] …
PAR1	Yeah, it was! Everything was in GCL, submitting jobs … And they were very forward-looking; and so, they bought COGNOS. Back in 1995, we were building all the MIS for the organisation. And it just so happened that they had a tie-up with Halifax, which was the biggest building society in UK at the time; we used to sell all their mortgages. Something happened in the tie-up and they split. And so, we ended up splitting the customer base - you take 2 million, we'll take 2 million. So we had to find a way to get value out of these 2 million customers. So they invested heavily back then, 1995, in database marketing. They were one of the first companies in the world to do campaign management. with the Prime Response Vantage platform. And we bought Clementine. It wasn't even SPSS at that time [that owned Clementine], it was ISL. My trainer in Clementine is now the head of data mining at IBM - Colin Shearer! This was like first-generation; really early days. I was just lucky. I was good at SAS, I picked it up, I understand the mathematics, I could speak to people, and I had a bit of personality. They taught me SAS, they taught me campaign management, they taught me data mining. So I went from their sales management thing to their fledgling customer analytics team, and I did that for about 5 years, right through to about 2000.
PAR1	And then at 2000, we already had a great reputation, we were already getting relatively big ... 2000 was the 'dot com' and all these consultants were coming in, and they had big watches, I remember. And they used to speak to me and my boss, trying to sell us Siebel and all these things. I remember looking at them and going "God! You're just an idiot! But you've got like a $10,000 watch on your wrist, and I'm here with this Swatch. What's going on!" So I decided at that point that while this [Standard Life] is a nice job, I needed to go into consultancy cause that's clearly where the money is ... you know, the 'dot com' boom. And so I joined PWC ... because there were a lot of vendors coming out like Siebel and Epiphany ... and I wanted to learn these tools. So I thought going into consultancy was the best way to do it. So I went to PWC, spent a couple of years there, did projects like Barclays and Westpac in Australia, and Royal Sun Alliance ... and then IBM bought PWC, after the Enron failure. And that was the last good. IBM was a very different culture form PWC. And so I did IBM for a couple of years and that took me here [Singapore]. So I came here in 2003 for 6 weeks to run the POC for choosing the data warehouse, choosing the marketing suite. The 6 weeks extended and eventually became a year. And then at the end of that, ORG1 said, "Do you want to join us? We're building this thing now, you recommended it ... live by your words."
Eric	And they [ORG1] didn't have a team before?
PAR1	They did actually. ORG1 has a team since the late 90's. Very small team. They had Clementine, had an Oracle data warehouse, they had Business Objects. They team was maybe 4 people, mostly campaigns, with a little bit of MIS.
Eric	ORG3 also had exactly the same platform!

PAR1   I can imagine. It was only about 2001 that ORG1 became serious and they
            brought in [xxx]. He came in 2001 and he was the one, that for 2 years, tried
            the business case to do the project that I then joined for. That took a long
            time just to convince them to get the money. And the team that I joined in
            2003/2004 was maybe 8 people. Very basic. Mostly just campaign. A little
            bit of reporting. And we spent 2004 and the beginning of 2005 building the
            EDW [Enterprise Data warehouse], building the Unica suite out, and then it
            started taking off.

Eric   You mentioned it was mostly campaign and a little bit of MIS. Was the
            reporting handled by somebody else?

PAR1   No, we're different from ORG3. In ORG1, there is no central MIS team.
            There's like a Finance team that call themselves MIS and Planning; they do a
            lot of the financial reporting. When it comes to things like customer
            reporting, like how big is my portfolio, how is it moving, then typically in
            the old days, that would be done in the analytics team. But there are some
            units based in each business also that does ...

Eric   They have Business Objects?

PAR1   Yeah. They get it [MIS] for themselves. But there is no central MIS function
            in the whole bank.

PAR1   So getting back to the questionnaire, I've been doing this since 1995, so yes,
            20 years.

Eric   What does BI&A mean to you?

PAR1   For me, it's all about driving value from the rich customer data. It's about
            working with all the products and segment managers across the business to
            understand where the problems are. And using the data asset to solve their
            problems, and actually turn that into action. And so for us, a lot of the work
            we do doesn't stop at pretty slides/decks, it's all about "what are you going to
            do with it", and actually working with our business partners to execute it.

Eric   Do you have a distinction in your mind between data analytics, data science,
            business analytics, business intelligence? Because these words have all been
            thrown about.

PAR1   We don't segregate them. We very rarely use the word data science, to be
            honest. I struggle with the words 'data scientist'. Because 'scientist' to me is a
            'back office' guy. We see ourselves as very business-focused, we're
            embedded with the business, we partner with the business, we meet them
            every single day. It's understanding what their specific problems are and
            trying to solve those problems. It's less about us playing with the data or
            things that interest us; it's more about "what do you [business] need? How
            can we help you?" Focusing on the things that matter to them. We just call
            ourselves Analytics. Although within the Analytics, there are sub-divisions.
            There's the reporting side, the campaign side, the deeper modelling side. We
            see these different things but it's part of the spectrum for us. The spectrum of
            analytics.

Eric	Who and which function does the BI&A team reports into, and why? It has evolved, hasn't it?
PAR1	This is an interesting one. The analytics team historically sat in the consumer bank. The consumer bank is still our biggest user; probably 70% of our work. And so the team we built was in consumer, even in the 90s, but over time, we've been extending our reach and becoming much more of a group function. We do consumer, we've taken more of the advance analytics for [xxx]n [subsidiary], we do it for ORG1 Securities, we do the HR Analytics, we've done stuff with Operations. And it was getting to a point, especially when we took on [xxx]n, that it was getting awkward that we were sitting in Consumer [Banking]. Because Consumer was paying for us, and we were using the resources to do work for other parts of the Group. And so, effectively about 3 years ago, we were taken out [of Consumer]. And we were elevated to become a Group function. And so these days we sit in Group Customer Experience division.
Eric	So prior to being taken out, you would have reported into the Consumer head? One-down to the head of Consumer?
PAR1	Yes. Although there's been different models there too. Mostly were reporting into the head of Consumer, but there was a very short period of about 1 year where we reported into the CMO. But frankly, that was a failure.
Eric	Can you talk a little bit about that? So why did they think it was a good idea to put Analytics under the CMO?
PAR1	Because the head of Analytics at that time, [xxx], left (in 2011) and we had a new CMO coming in. First time ORG1 had a CMO. So when the CMO came in, I think they gave him the portfolio Segment Management, Marketing, and Analytics.
Eric	Like 'Franchise Management'?
PAR1	Yeah. Trying to make the job more attractive. But in the end, they realise it was too much of a portfolio for one person. Or the person they hired couldn't handle it. Plus the people were typically traditional marketers, they were far more comfortable with the agency and creative side, and they didn't know what to do with the analytics. And so in the end, we were largely left to our own devices & so ultimately the model wasn't overly successful. The combined team structure at that point was a failure for us because we had the wrong person leading it & it was too large for 1 single individual. So we were only there for about 9 months and they realise this wasn't working. "You're doing all these things for the other parts of the Group as well; we're going to take you out and put into this Group capability." So these days we are in Group Customer Experience, and it supports all the ORG1 Group across the region. There are 4 teams - there is ourselves [Group Customer Analytics Team], there is Market Research, there is Experience Design (which designs all the user interfaces), and there's Service Transformation, which is all about service standards and how we interact with the customers.

Eric   And so, Group Customer Experience is not just a Consumer function. It covers the Corporate Bank, the Private Bank and all of that?

PAR1   Yes [xxx].

Eric   So why Customer Experience? One would not logically think that Analytics is part of Customer Experience.

PAR1   Yeah, but if you think about customer experience, it's all about designing the journey for the customer. And the first phase of that is understanding who you customer is. So it's a combination of the [Marketing] Research side, and our [Group Customer Analytics] side. So we can tell you who are ORG1 customers and what they are doing. And the Research tells you why they are doing it; what are the people out there in the market also doing. So I can see some synergies there.

Eric   You don't see Research as part of Analytics?

PAR1   I see it closely related. At the moment, it's a separate team. For historical reasons. I'm sure at some point the two would come together.

Eric   But were there ever discussions to say that skillsets are similar; for example, if you are going to do focus group research and surveys, these are also very statistical in nature.

PAR1   Yes, they are [similar]. At the moment, they are separate just because of history - 2 people of similar seniority, and 2 different team cultures … But if one of us ever leaves, or I get hit by a car while riding my bike, then I'm sure at that point, they might think about combining the 2 [functions]. Because it makes sense.

Eric   OK. You mentioned that you are doing some work for [xxx]. Is that actuarial work, e.g. modelling for life expectancy?

PAR1   We don't do the actuarial stuff. We focus purely on customer analytics. So things like risk modelling, the actuarial modelling, we leave those with the respective functions. Because we've effectively built one platform - one data warehouse for the Group. We have the Bank's data (consumer and corporate), we have the [xxx]n data, we have the Securities data, with a single customer view on top of it. And we are the only people in the whole Group who are allowed to see the data for all 3 entities. So we do a lot of work to understand the overlaps between the 3 different main companies and what are the cross-sell opportunities across each, and how can the Insurance data enrich the Banking profile and things to help us find new opportunities and vice versa. So with them [[xxx]n], it's a lot of things like cross-sell into the other parts of the Group, the deeper modelling where [xxx]n doesn't have the skills themselves, and they'll come to us to ask us to do it, like the next-best-product ... that type of thing. Basic MIS and basic campaigns we let them do it themselves.

Eric   OK, so you don't take on [xxx]'s campaign function. You let them run that.

PAR1   Yes, they run most of it. Some of it we will do it … anything that involves Group data, because they won't have access to it and so we will do that for them.

Eric   OK. So, right now, just to clarify, you head up the Analytics team here [in ORG1], and you report into the Head of Customer Experience, which is enterprise. And the Head of Customer Experience reports into …

PAR1   The Group CEO. But this will confuse you a little bit. He [Head of Customer Experience] is also the Head of IT. He was always the Head of IT. The old Head of Customer Experience was someone else, but he also reported into the CEO. But then when he left, they just looked around and said, "Hey you, [PAR1's supervisor], you are in charge of IT, you understand this stuff, [why don't] you also look after this function too." So he's double-hatting at the moment.

Eric   So, he's both the CTO or CIO and Customer Experience head. That's actually quite unique. I've not seen that in any bank.

PAR1   Yes, and when it was first mentioned, I was like "Really?" Cause I didn't think he would get it. I thought he would be very much an IT guy. But he gets it. And he's very hands off. He's like "You guys know what you are doing. If you have problems, come and see me. But apart from that, you're on your own." So it actually works quite well. I'm surprised. Plus from our [Group Analytics] side, we need data, and if we ever have an issue, we go to the guy and he enables it for us. <Finger snap> It's not a problem. So it's actually very good for us.

Eric   OK. I'm digressing a little bit, but you mentioned you did some work for [xxx]n and all that. So there are other Analytical teams that are around. In particular, let's say the Group Risk Analytics team - how do you define those boundaries?

PAR1   At the moment, Group Risk is a big team. They must have 100 people at least. It's huge! Much bigger than us.

Eric   Because of Basel reporting and all that?

PAR1   Yes, and because they are less efficient <joking>. But we use the same data warehouse, the same data models, the same tools.

Eric   Who owns the data warehouse?

PAR1   It's owned by [xxx], a guy in IT. Head of EIS - Enterprise Information Systems.

Eric   It's not owned by you?

PAR1   No.

Eric   It's owned by IT?

PAR1   Because the way it is, is that there is the data warehouse and there is the datamart. So I owned my [data]marts. There is also the 'Council' that looks after the data warehouse in conjunction with [xxx]. We [Group Analytics] would sit on that Council. We are power users within the Group, so we have a lot of say about what actually happens. But ultimately, the data warehouse is a Group resource, funded at the Group-wide level, and so IT manages that. It works pretty well, to be honest. They've invested $100-150 million in building it; it is good.

Eric   So Risk would have their own datamart that doesn't 'eat into you space'?

PAR1   Yes. It comes from the same data warehouse but then they'll have their marts and we'll have ours. There'll be overlaps, but their [marts] is less rich than ours. They will build the scoring models on their marts and they will publish the score effectively into the upstream data warehouse where we can also then access it. So that's where the collaboration comes. Although interestingly, in the last week, we always hypothesise that we can always ... because our data is richer than their data ... that we can do a better job at building the models.

Eric   Yes, I agree.

PAR1   Finally the business has realised that too. And they've come to us and say "Hey, can you do something for the risk guys to show them how additional data can make their models better."

Eric   The Risk guys get stuck in very much … demographics, profiles, and a little bit of transactions …

PAR1   Yes, they are barely touching the transactions. When I looked at it, it was like "What are you doing? That's like only 20% of the data!" So now we are starting to enrich their space. So we'll see how that goes.

Eric   Back to the questionnaire … Are you satisfied with you current reporting [hierarchy], and if not, where wold you prefer the [Group Analytics] team to report into? I know in the CMO one, it didn't work. But let's say right now in Customer Experience … clearly a lot of the reporting is also dependent on personalities, not just the functional stuff, right. Clearly personalities need to work, click, and all of that. But if you removed that part, just objectively, does it make sense [to be reporting into Customer Experience], or would you do something different? Or you could even subsume other functions within the Analytics team as well.

PAR1   I was initially sceptical when I heard where we were going … being attached to someone who is an IT guy. I thought he wouldn't understand the space at all. But I find kind of the opposite. He actually gets it and if anything, it's open a lot of doors for us. In the old days, when we were associated with the Consumer bank, if I ever tried to speak to other business units, they are always kind of sceptical - "Wait you're in Consumer, why would I let you help out my team? You are always going to be looking at it from a Consumer lens." Even when we first split out into the Group function, the person in charge of it had a history in Consumer banking, and so again, when you speak to the other parts of the business, they are kind of like "Yeah, you want to help me, but you probably just want to use my data to help them

[Consumer] or you are just going to charge me more." There were just political challenges. But being under the IT guy, I find people view you as totally independent. You don't seem to have a hidden agenda being under him. And because IT deals with everyone in the bank, [PAR1's supervisor] is involved in all the major projects, he knows what's going on. So actually, he's able to open a lot of doors. Give us a lot of insights we previously wouldn't have got. Plus the ability to just make things move. [For example], the data warehouse is moving slow and we need to upgrade the capacity ... he just tells them, and suddenly, it's done. People are running around and jumping at our every word.

Eric   But would you say that because he [[PAR1's supervisor]] double-hats and has the Customer Experience under him. If he did not and was purely the CTO, and Analytics was under him, would it still work?

PAR1   For me, I don't think that would work. I think then you'd be relegated to a back-office function as an order-taker. But because the Customer Experience function is known for being innovate and pushing the boundaries, and we are associated with that, and that's a very good thing. Plus he's constantly looking for the synergy. Especially on the Research and Analytic side. Even how it can be used to design better systems, using the Design Experience people. He's just looking for these opportunities ... forget the IT manager, if he was the head of Customer Experience, then I think in the bank, that's the best place for it. It's a really good division; people know it's there to change things. I'm happy with that. I really am. Better than [being] in Consumer. If you are sitting in the business unit itself, yes, you are close to the business and you understand what's going on, but you also get pulled into their day-to-day BAU [business as usual]; tiny little thing ... and it's less strategic. Plus you become beholden because they are paying all your bills. It's like "I need you to do this, I need you to do that." You get bogged down with shit.

Eric   And then you'd need a whole program management office …

PAR1   Yeah, whereas where we are, we are off to the side, and we can choose now to be more strategic. "Now, we only have limited capacity and I don't think that's the best use of the capacity. Out of all the things you've got, we would recommend going for these 3." It just allows us to be more independent, I think as well. And when we were in Marketing [CMO], that was one of the challenges. Because when we were sitting in Marketing, we had to evaluate campaigns. Now your boss is in-charge of those campaigns, and there was an independence issue. You can't just say this campaign is rubbish. This lady is choosing your bonus so you have to choose your words carefully. So I think if you sit in Marketing, you will have independence issues.

Eric   That makes sense. In ORG3, when I was running the Analytics function, I started up the Marketing Governance committee, and the Consumer head and I would chair it. While we call it the Marketing Governance, the Marketing guy doesn't chair it because of independence. It's in the interest of the Marketing guy to only show the success and not the failures.

PAR1   Definitely. And that was the challenge when we were sitting in the marketing team. You had to be very careful about what you show. I'm glad

we are out of it. Now, everyone recognises that when we say something, we have no [hidden] agenda; we'll say good or bad.

Eric   Do you participate in senior management meetings?

PAR1   Yes. I attend the leadership meeting in the Consumer Bank, every 2 weeks with all the leadership team. And I attend the monthly reviews of every products and segments. [xxx] and [xxx] [Group Customer Analytics team seniors] would also do that. And that's how we find out what's going on and what are the really big issues. And we have a bi-monthly meeting with the CEO as well. We get a fair bit of visibility.

Eric   In those meetings, other than participation, do you have specific roles and responsibilities? Where you know, you are the last guy giving the approval or they need to go through you for some activities?

PAR1   ORG1 doesn't really work that way. You'll find that we have tons of meetings, but they are not that structured. So it's anything that requires numbers - "[BI&A Function], can you run that number? And send it back to me or tell us what you think we should do." But as far as gate-keeping goes, it doesn't really exist in ORG1. There is not a lot of structure.

Eric   As an example, let's say someone needs to run a campaign. Let's say in the Consumer space. Do they have to seek [BI&A Function]'s OK to say that someone [from [BI&A Function]] has looked at it, someone has looked at the ROIs, looked at the validity of the campaign, and agree to sign it off?

PAR1   No, it goes through Finance. So basically if you want budget to run a campaign, then Finance is the one responsible for saying yes or no. But in the business paper that they have to submit, then they'll come to us for the numbers to back that up. The Finance guy would check to see if we agree to those numbers.

Eric   But business takes on their own responsibility to simulate the [campaign] outcome? They get data from you, but they build their own simulation.

PAR1   Yes. And I'm glad. Because we run 1,600 campaigns a year. I'd spent the whole day just doing business performance memos. But they'll come to us for the numbers to back it up. In fact, frequently now, everything's in dashboards - Qlikview, and they can pull it themselves and even the Finance can go into Qlikview and say "Ok, I agree with your response rates; that's what the last campaign got." So they can check it out that way. We try and stay out of those things to be honest. When we were in Marketing, that's one of the things they got us to build - you know, what should the process look like. And so we helped to build that, and then pass it on.

Eric   Do your then go in [to Qlikview] to re-assess the validity of the information and the response rates?

PAR1   No. Because what it does is that it [Qlikview] takes it from historical campaigns. So it self-refreshes. In the last 18 months, we've done a big move to self-service analytics, because we were becoming a bottle-neck. The team's too small as you know. <Banter> We were becoming a bottle-neck.

There was so many request coming in and so little resources that we had to find a way to free ourselves from the more mundane tasks. So we've done a lot of work around Qlikview, deploying about 80 dashboards, for all the main business units where they can self-serve on all the key questions. So campaign results are daily. So you can just drill down and see how has all my credit card campaigns have done, how have the utilisation ones done, how have the email ones done. And you can see all the average responses, and you can put that in [to the business performance memos]. So you don't need to come to us for those numbers.

Eric   That's great. How is your BI&A team organised?

PAR1   Ok, this is an interesting one. So, we've got 38 [staff] as I said. We've gone through various models. In the old days, we used to be … <drawing diagram on whiteboard> … probably around 2007, we used a model called the RM [Relationship Manager] model. So, effectively, what you have out there are people in the business asking you to do work. So that might be credit card, that might be a home loan, that might be wealth management, that might be premier banking. So there are lots of people out there asking us to do work. So, effectively what we've done is assigned relationship managers to key client groups. So when we started in 2007, there might be one for the lending area, there might be one for the wealth management space. And we implemented is what we call a vertical model. And so we started assigning 'pods' of people to support each vertical. I think back then we had maybe 3 RMs. And we had the unsecured vertical, the secured asset vertical, and we had the wealth management vertical. This is effectively a 'pod' of people to support any request that comes in from the credit card [as an example] team. And on top of that, we have an offshore team in China, in Chengdu, which is like an 'over-flow' team. We also use them for lower-cost work. And what we found when we implemented this was that it was very good for a number of reasons - the RM effectively co-locates with the business units; this person is not a data person, he's a business person ...

Eric   And they are sitting with the business?

PAR1   Initially in 2007, they were. They sit there for maybe 2 days a week. But effectively, all these clients out there in the business … we have what is called an authorised requestor process - there might be 130 people in these business units that are allowed to ask us to do work. And so they all know that this person here is who I deal with when I deal with [BI&A function]. There is a single point of contact. Cause in the old days, they used to come straight into the Analytics pool and it's very hard to know what is actually going on. So this person is [needs to know] "what is their main business issues, who are the main stakeholders, what are their KPIs, what is all the work they want us to do?" They are able, in conjunction with the business, to prioritise and say, "Well, you've got 30 requests but we only have capacity for 20. Let's sit down, go through and say which are the 20 we think that add the most value."

Eric   Sorry to interrupt. So the RMs are part of your team? Although they 'look' more like the business guys, their agenda is to make sure that the work within the Analytics group is …

PAR1   Totally. They're Analytics people. But they are less data-focused and more business-focused. They can speak, have relationship, communicate. And so, their jobs are to figure out what work we should be doing that is important to the business. They would then send it to the Analytics 'factory', the Analytics 'factory' would actually do the work, seeking inputs from them on "Hey, we notice this, we notice that, what do you think?" And then once it's finished, the RM would be responsible for going back and translating and saying, "Here's what it means, where's what you should do with it, and turning it into action."

Eric   So, the presentation of the insights, findings, recommendations would be done by them?

PAR1   It's usually done by the RM, but they might bring the senior analyst along to answer and explain any technical questions.

PAR1   So we implemented this model in 2007 for a number of reasons - (1) we were having trouble understanding what work was coming in and where is it, what is the status of it all? Are we working on the things that are most relevant to the business?

Eric   Is there an RM that manages the offshore unit in Chengdu?

PAR1   That's a good question. There is effectively one of the RMs who is a mainland Chinese and so she would manage the Chengdu 'pod' as well. This has since evolved. But back in 2007, this is kind of what we implemented. It just got us closer to the business. Previously you had the business over here, you had the analysts down here, and there wasn't a lot of understanding of whether the Analytics guys are building anything relevant to the business, and then, did they turn into action. At least this way, there is a way of interfacing with the business all the time.

Eric   And when this model was implemented, did the nature of the [Analytics] work change as well? Did the types of request change?

PAR1   Certainly the volume went up hell of a lot! Because I think previously, I'd say the old Analytics team would be kind of stand-offish. Because you've got Analytics people, and Analytics people are not very good at interfacing with the business. They don't rush out to find out "What can we do to help your?" In the old days, you had the business out there, and your had Campaign here, and you had Analytics here <diagram drawing on whiteboard>. It was very much an order-taker type thing. Because none of these people are very people-friendly. They are not going out soliORG3ng for work and saying, "Hey, here is how Analytics can help you." And so you find it was very reactive in accepting work when it came in. Occasionally the team would say, "OK, let's analyse a particular area" and we do a deep-dive data discovery and they go out to the business and say, "Hey, here's what we've done. Here's what we've discovered." And in some cases, the business would say, "Great! It's really interesting." They may not use it. In other cases, they are like, "Why are you looking at that?" Because there was just a disconnect. For us, the RM layer is really building the bridge between the business and the Analytics factory. It also gave us scalability. And that's the other thing. Because we were moving from being just Singapore-focused to also doing

Malaysia. And so what we can do then is effectively take on Malaysia by bolting on another RM, we bolt on some additional people to the pool, and then we can extend the model to other areas. And so when we take on [xxx]n ... add an RM, add a couple of people in the 'pod'; they can be here; if you don't have a lot of money you can put them in Chengdu; that's kind of how we evolve that way.

Eric   Where do the RMs come from? How do your select for them?

PAR1   Very hard to find them, to be honest. Especially back in 2007.

Eric   Do your select them internally or externally?

PAR1   Externally. And it was very hard to find them. Because they have to have people skills … they're almost like business development; they have understanding of the business, and they have to understand how Analytics work. They have to have some grounding in Analytics. So, one came from hospitality - he was in Hyatt or something like that, doing business intelligence, so he understood Analytics at the basic level, but he had the personal skills, and ... we've had a few that came from Risk backgrounds, things like proper analysts and trying to train them on the RM side. We find that it didn't work so well. The more successful ones have been coming from a non-analytics background. One was a journalist, one was a psychologist.

Eric   So, it's easier to train a person for analytical work, so long as you have the personality, then it is to train someone for personality?

PAR1   So, that's what we implemented in 2007. Then that model also had some issues. What we found was … OK, our RM layer works quite well. But we had these 'pods' of people and what we found was that effectively we ended up with 2 verticals. We ended up with a wealth management vertical ... actually we ended up with 3 - Lending, and now we have one called Offshore, which is just the regional stuff. So Malaysia, China and Hong Kong, they all go in there [Offshore]. But what we found was the vertical was splitting in 2 - we had one group of people who really liked doing campaigns, and we had one group that really liked doing analytics. That wasn't good because it was very limiting for these guys - if you were sitting in the campaign team in the wealth management vertical, where could your go in your career? Maybe a senior campaigner. But in Singapore, there are like 10 of those jobs in the whole country! So it's very limiting. Plus people actually over time, as they get more confident, now they are saying "I want to meet the business more."

Eric   Do they aspire to be RMs?

PAR1   Well, that's the thing. Some of them do, some of them don't. People were telling us in the employee engagement [survey], "I want to learn more things. I don't want to be just a Unica expert. I don't want to be just a SAS expert. I want to learn more." And so we kind of evolve from this to more of a cross-trained type thing, where there are multiple streams where you can learn SAS, you can learn Qlikview, you can learn Unica. Now you can do campaign and analytics. You go across the entire spectrum. Plus they are saying "I want to meet the business more." And so now we are starting to

break down some of these RM boundaries and make some of these analysts who have the confidence now to be RMs themselves. So, we've been giving them consultancy skills and that type of thing. So over time, while we still kind of have people in each of the verticals, we're like the strong leader of it. Even people in the pool themselves are now getting more face-time with the client and the ability to go meet the client and say, "What are your problems? What can I help your with?" So we're actually in the process right now of changing. Just because the people needed more development. And one of the development they wanted was the ability to go and meet the customer [client], interact with them and have a discussion with them; present back.

Eric   To play this back … would you say that part of the original design initially was very specialist-centric. Either your had campaign skills or you had statistical modelling skills. The specialist skills needed an overlay of an interface, a relationship model that was lacking. And once that was done, even within the specialist skills ... because there's been a lot of investment in self-service [analytics], there's been a lot of standardisation in the data models and processes, these specialist skills could now become more generalist, because the need to have them specifically in those roles becomes less required.

PAR1   Yeah, I would agree with that. I think also the business now is a lot smarter in what analytics can do to help them than they were in the old days. The RMs in the old days were doing a lot of business development and selling, "Here's what analytics can do to help you." But now the business is actually a bit smarter. They've been doing this for years. "I know analytics can do these types of things. Hey, can you help me out with a predictive model? Can you build me some event triggers?" So the need for a dedicated relationship-sales layer is kind of going away. Plus a lot of the people down in the analytics pool ... because they've been here so long now ... they're experiences are a lot more rounded. So they now more holistically what analytics can do to help the business, and what a lot of the questions the business is asking. Cause they've got years of experience. Back in 2007, a lot of them maybe had 2-3 years of experience. They didn't have a great depth of understanding how the bank works. So I think it's come from both ends that the need for the RM layer is starting to diminish.

Eric   So the final iteration may look like when your first started, but now what you have is just generalists, but very well-trained generalists. And you've got the whole infrastructure, automation supporting it already.

PAR1   Yeah, I think that's the ideal. I'm not sure we will ever truly get there. But there are still people in the pool who don't have the well-rounded people skills or prefer to just sit there and build the models. Not everyone is fully rounded. But there are a lot more people now who are than in the old days. So it's definitely evolving. And the business ... they're understanding it now too. Which is a good sign. And that's an area we are looking to beef up - rolling out a training course now for the bank, for the employees themselves, teaching them about analytical techniques and how it works, and the questions that it can answer. So we are also trying to educate these guys more too.

Eric	As your see the [Analytics] functional design starts to evolve, do your also see the nature of the work, the variety or the complexity of the work, evolve as well?
PAR1	In the old days, a lot of the work was 'sums & counts'. Tell me how my portfolio is performing. How many clients have I got? What's their cross-product holding? Basic MIS. A lot of it in the old days. These days, cause the business is a lot smarter, they've evolved beyond that, a lot of it [work requests] is more 'what if' type questions, and far more ambiguous. A lot of the 'sums & counts' are in ClickView now. That's all fully automated. If you want to know, go and click the button and it'll give you the answer. So it's far more deeper work now that's being done by the [Analytics] team, and the more basic, mundane work is all automated and they can go do it themselves.
Eric	So, back to the constructs of Uncertainty and Equivocality, uncertain problems are clearly within the realm of data analytics - I need to optimise my campaign, I need a predictive model … you know what you are solving for. But because you also have a seat at the management table, do your also then get involved to say, "How should we evolve the customer journey? How should we compete with ORG2? How should we compete with ORG4? Which are interpretative in nature. How do I bring analytics in to sort of show one case vs. another?
PAR1	Effectively, any major decision in ORG1, the CEO is going to say, "Where is your data? How do your back this up?" So all those decisions we'll [Analytics team] get involved in making them. I actually have a list … because you asked that question [pre-emptive email] … what I did was I looked at our work log for the week ... because we track all the work we receive. So I'll show your some of the things we were working on last week. Just so your get a feeling for things ... cause it's a huge variety.
PAR1	Number 9 … your asked, "What kind of [business] questions we work on?" And so I looked at our work log. And so last week … I broke it [down] into about 5 things. Descriptive requests - can your benchmark the new-to-bank, by vintage, the CASA [checking/savings accounts] and things ... PDPA [data privacy], these are just 'sums & counts' effectively. How many people are registered on the PDPA? What is the profile of those people? What can we do to go in there and capture more permissions ... you know, which people should we target first for getting their consent? We're working with Andrew in the contact centre ... what are the high-volume service requests? What can we migrate? How would you recommend we migrate it?
Eric	So, for even these kinds of questions, so what is the profile [of the customer] and what should I do with them … profile, yes, that sort of explains it. "What should I do with them?" is an equivocal-type question. And how would you interpret a request like that?
PAR1	A lot of it would be from our banking knowledge. A lot of it will be hypotheses-based. And a lot of it will be 'in discussion' with the business. So we sit down and we'll show them "here's what we found", when we analyse your service request volume [call centre example], here are the top 10. Here are the opportunities we can see for potentially migrating those things based

on the profiles of the customers. And that's a discussion to say, "What do your [business] think? You know, your guys are the experts." So, that's kind of why we have the RM. It's to have the relationship with the people in the contract centre. He knows who to bring into the discussions so that we can say, "Here's what we think." Because if your go in with a blank sheet of paper, in Singapore, often people will leave it as a blank sheet of paper and will say nothing. But if your go in with "here's our thoughts", then they can challenge it and build upon it. So we always go in with an idea.

Eric   How do your 'knowledge manage' these ideas? They grow over time … because they come from experience. Where are they [ideas] sort of institutionalised?

PAR1   I don't know. That's a good question, actually. Like every piece of work we do, we log it. And it gets into our internal system. And you can go back … maybe 5 years' worth of history and find every single request we've done. What was the code, what was the output, what was the management summary in the end. So the data is there. We have it, and we obviously share it with the business. Is there like a knowledge management, a central place where I could type in ...

Eric   "This looks like something I've done before, and I use to recommend these actions …

PAR1   Yes, yes, I get you. You can easily find it. Our work log is searchable. So you can find "contact centre migration". And you'll be able to find any request we've done in the last 5 years. But, your make a good suggestion. Do you have that at ORG3?

Eric   It was all embedded in our heads.

PAR1   Yeah.

Eric   If you have a team that has longevity, you can do this. But the minute the team goes through turn-over, a lot of it is lost. It just sort of struck me because in ORG3, we didn't really have this knowledge management institutionalised. The seniors had them in the heads.

PAR1   Yeah, we kind of have that. We do keep it all stored. All the queries, all the reports and things. And people can search it. Whether they do search it, and whether we make it easy for them to search it … it's actually a good point. Yeah, that's one to think about actually. In the bank, generally, we are pretty crap at managing our knowledge.

Eric   That's true. Even in ORG3. I mean if you are doing so many campaigns … in ORG3 Singapore alone, we were running 300 campaigns a month … there's no way we could cope [with knowledge management].

PAR1   So that was 'descriptive' [analytics]. We also do 'predictive' [analytics]. So last week, we were working on … we're replacing our CRM platform at the moment. So we're working on the whole next-best-action concept … what's the next best action for all the segments.

Eric	What about strategy-type work? Do they come and say, "Where do we need to be 5 years from now? We've bought, we've done this offshore, we've grown some of these businesses and all of that … you've seen some of the market research information … what do you think?"
PAR1	So, the third category we were working on last week was 'prescriptive' [analytics]. And in that, one of those was EMA [emerging mass affluent] segment. So we have a big workshop in about 2 weeks on emerging mass affluent. Which is all about "What is their strategy for the next 3 years?" And so we've been working on that, trying to understand how is our EMA segment going, how many customers do we have, what's the profile, where's the growth been, how are they using the channels. And what has their [business] strategy been for the last couple of years, and how is that performing. So we're kind of working on that.
Eric	How do your form opinions? While your make these data [e.g. on EMA], how do your come to a series of potential hypotheses, or potential scenarios where your think it makes sense, it's something the CEO would like or want to look at?
PAR1	It's in conjunction with the Segment Manager. So we can look at the data, we can say, "Well, compared to the baseline, compared to you target, compared to other segments, you are under-performing in this particular area. We think there might be an opportunity there, and we can see these trends ... people moving away from these channels, moving more towards these ... But it's really the Segment Manager's job then to take that in conjunction with us and say, "Actually, here's what I'm going to do with it." So we give them suggestions based on what we see, based on our knowledge of the market, what we read in Gartner and Forrester and all these other sources, but ultimately, it's them [the business] who has to come up with the strategy and say "This is what we're going to do, and this is how we're going to drive it." So, it's a partnership. We make suggestions based on our knowledge. Is there a structured process for how we come up with these hypotheses, I would say, "Probably not." It's not that structured.
Eric	That's where the experience and seniority counts …
PAR1	Yeah.
Eric	And the more you are embedded with the business, the more of that you can bring into your work …
PAR1	Yeah. We're meeting them on a daily basis, we're attending all their major meetings, we know what they are working on, we know what's working, what's not working. So that kind of how we get that knowledge.
Eric	In the beginning of this conversation, your mentioned now you are also getting into HR Analytics or Human Capital Analytics. So, something like that is almost 'green-field'. So none of your guys have any experience …
PAR1	That's a good example ….

Eric	You may have technical knowledge for it, but the business also has no experience to tell you [what to do] …
PAR1	That's a very good example …
Eric	How do you evolve that?
PAR1	So, HR Analytics. That's was really us [Analytics]. We've wanted to do it for years. And we've been doing a number of pilots with them over the years, trying to interest them in the concept. And effectively, I think it was in the middle of last year, we managed to convince them. We chose one pilot ... one project ... and it went well. And they gave us some [incremental] headcount. And what we did with them was we ran a series of workshops. So from the head of HR, the head of Recruitment, Learning & Development, Compensation, Talent Management ... all the senior guys. Maybe 25 of them. And so we've done a number of workshops educating them about the 'art of the possible' ...
Eric	Intro to Analytics in some sense?
PAR1	We've done Intro to Analytics, but then also HR Analytics. What can you do with it [HR Analytics].
Eric	How would you know? You went to read up on it?
PAR1	Yeah. We pulled in case studies … Google and Amazon, and things like that. So here's how all these different companies are applying it [HR Analytics] in L&D [Learning & Development], in Recruitment, Retention, etc. So just waking them up to what it could actually be. And then we did some basic pilots. We chose 3 or 4 obvious questions we had, and we worked on those, and we demonstrated back to them just using their own data. But then, we had to figure out what we were going to use this capability for the next 3 years. So effectively, we did a big workshop with them, maybe 6 months ago, where we effectively started brainstorming around all the major subject areas in HR. So, recruitment, L&D, pay, incentives, etc. We effectively got them to articulate what are their big questions, and so in each of those areas, they came up with 10 or 15 questions and collectively, we got them to then prioritise, and say, actually, the top 6 questions in HR that we need to solve to be effective are X, Y and Z. And so based on that, we kind of drove them down to say, "Ok, in the next 18 months, these are the 6 things we are going to focus on." And the head of HR was there and he was like "Yup! This is a priority for me. You guys get on board."
Eric	Maybe we digress a little bit. In the HR space … my own observations have been … the HR director's priorities may not necessarily be the business priorities. He's looking for efficiencies and effectiveness within HR as a function. As opposed to solving ... unleashing human resource potential within the business. And in that workshop [that your mentioned earlier], how do your then sort of bridge ...
PAR1	Well, it's interesting … because in our HR model … one function of HR is … they also have RMs. So effectively, the way HR works here, is essentially they deploy RMs into the business and they bring back the business

priorities. So the RMs are all there - so what's the burning issue in my business areas. They are pushing their questions. And when we looked at it, actually from my view point, the questions they were asking were relevant questions ... definitely. You know, "Who's going to leave CFS? How can we train ... we have 500 new sales people coming in the next year, how can we get more efficient in getting the right people and getting them up the curve quickly?" So, the questions were good questions. They weren't just HR head office kind of stuff. And ... I think HR [Analytics] is a good example, because you're right, it's green-field for us and green-field for everyone!

Eric   Clearly, Analytics can play a leadership role when everyone is feeling their way through … and how do your then build this knowledge management approach …

PAR1   Especially in an area that doesn't understand analytics and is wary about what it's going to show. Yeah, it's quite a mine-field, that one. But it was, "OK, let's get all the senior people in the room, and let's be very collaborative to understand what is their problems, and let's get them to prioritise as to what they think the big problems should be." We'll obviously steer them in the right direction.

Eric   And so, now if you could go back, and knowing what you know … if you had to re-design the Analytics function from scratch, would HR Analytics be logically be part of the charter?

PAR1   Actually, I think it would. If I had the headcount. Because I think it's an area where Analytics can add a lot of strategic value. HR, you know, if you look at the cost for the company, it's the biggest cost centre, apart from IT, I think. And previously, every decision is being made based on intuition. So I think for [HR] Analytics ... the bang for the buck, it's definitely an area I would prioritise. Possibly over a lot of other areas actually. If I was starting from scratch.

Eric   Any views about compensation [analytics], particularly incentives … sales incentives, commission-based incentives. Because there's a lot of data that's involved, and one can argue, science, in the way that sales people change their behaviours … Is that part of the charter within analytics?

PAR1   At the moment, "No". We did get involved in a project recently looking at how we embed service metrics into the scorecard and how that might work. But the actual calculation of the sales scorecards … I know you were involved in that in ORG3 … at the moment, that's done by Finance. So we've not been involved in that at all.

Eric   Would you want to be involved? Do you see that as part of HR Analytics?

PAR1   Hmm … I don't even know if HR does it in ORG1. I think at the moment, it's done by the individual business units. Yah, I think HR's job is to review the final policy and say "Yes, that meets the corporate guidelines." And they approve it for things like the commission scheme. I think it's all done by the business units because it's seen as a business promotion expense rather than part of the normal HR. So yeah, I would like to get involved in that, but with my current capacity ...

Eric   So, capacity aside …

PAR1   If I had unlimited capacity, it's certainly an area where we can add value.

Eric   So today, for example, like marketing budget … do you have a say in terms of how the marketing budget is allocated, based on what you know about the ROIs and the behaviours and all of that, or is the marketing budget allocated at the top from Finance and you guys and the [business] lines decide how you want to ...

PAR1   Yeah, the marketing budget is designed in combination with Finance and Marketing, and the business units. So I believe that Marketing comes forward with a … "Here's our recommendation of what the budget should be." You know, [for example], last year plus 10%. But then in conjunction with the business units, because the business units will submit bottom-up plans ... you know, [for example] Credit Card - here's all the things that I want to do and it's going to cost $20 million ... whereas Marketing will say, "Well, maybe I only have $32 million and we're going to give you $18 million." And there's a lot of bartering between them. Now, we are currently working with a Marketing optimisation firm to say, "Hey, there should be more science in that." So we are trying to show them the way forward - based on your past results, here's how you should have allocated your budget. Here's the optimal budget you should have had in each of the marketing units.

Eric   But they [business units] don't have to take that [recommendation]?

PAR1   No, we were doing this purely as an experiment to say "This is how you should do it. This is best practice rather than your hypotheses and some kind of barter-trading approach. So it's taken us years to convince the Marketing people to even to let us try and do this pilot. And we're doing a Marketing QED at the moment. We're trying to get into that area. To show them that there should be science behind it ... historically there has not been.

Eric   So while there's responsibilities [from Analytics] from a campaign performance and automation perspective, the campaign budget control is still in the hands of the business, and if they don't want to take your advice, you can't insist?

PAR1   No, I could sit in the meeting where it's discussed; I could sit in the budget planning meeting and if I really wanted to, I could say, "I don't think this is right." I could give reasons why I don't think it's right. But ultimately, the decision is with them [the business]. If they chose to disregard it [the recommendations], people would note that you weren't happy, but they could go ahead and disregard us. And then at the same time, they might be saying, "We need $35 million", but Finance is saying, "But actually there's only room for $30 million.", Finance will have the final say.

Eric   Let's say you are getting into these strategy-related and ambiguous/equivocal type of questions, your [Analytics] seniors … at least your RMs … have an understanding of the business and able to have that interaction [with the

business], but when they start to ingest the work into the vertical, and into Chengdu, how is that ambiguity managed through, down to the analysts?

PAR1   It's a fair question. The RM is effectively the manager of those analysts. So he has a very, very close relationship … literally, the manager is there ….

Eric   He just picks up the phone and he can call them?

PAR1   No, no. He's like 20 metres away! So he has a very close relationship. He briefs them face-to-face on the request. The Chengdu pod … although we have an offshore team, the Chengdu pod is largely for lower value work. A lot of it is the reporting type stuff ...

Eric   They don't do any modelling?

PAR1   They do a little bit, but not that much. Originally when we first set it up, we thought we would do more modelling there, more deep-dive, data discovery, but we found it doesn't work so well. You that kind of skill to be closer to the business.

Eric   Because they [Chengdu] didn't have statistical skills?

PAR1   They do. All of the Chengdu team have a masters at the very least. But just because they're offshore, the connection with the business, understanding the nuances of the data; and frequently you have to bounce things back and forth, like with the RM … it's harder when you are further away. So we found that they're [Chengdu] better for the lower value, more routine work. If it's quite a simple request, then we'll send it to Chengdu. A lot of campaign production as well, we'll send it to Chengdu.

Eric   You've got people with Masters in Statistics doing campaigns?

PAR1   Yeah. Some of them. A couple in Chengdu. Because of Masters in Statistics in China is about 30% the cost of a Singapore resource.

Eric   But do they get disillusioned?

PAR1   Well, they don't spend the whole time doing campaign work. But yeah, I think it's interesting. Cause we have our Chengdu manager is a guy. He was up in Singapore for many years. And what I found is the males get to do more advanced work but the females, because they typically stay only a few years ... and then they'll get pregnant and then ... they'll get them doing most of the campaign work. That's how he starts them off. And then he'll get them on to the more basic analytics. But they never get to the more advanced stuff, because typically get into the job for few years and then they tend to leave. But we do have people with Masters in China running campaigns.

Eric   So typically from a resource perspective … let's say if you have 100 persons in your team … what % of that would be Chengdu?

PAR1   In the ideal [situation] … if I could find people …

Eric   But currently? And ideal?

PAR1   Like today, we've got 38 people with 9 in Chengdu. And I think the plan originally was effectively we would keep building up Chengdu and it would probably be a 50/50 [mix]. But over time, I've gone away from that idea. Because the cost in China is rising so quickly - they are actually more expensive than my people in Malaysia. We haven't had a lot of issue with [employee] churn apart from the ladies getting pregnant, but I find that the business ... when your take on a new business unit, say I take on HR; we offered them the idea of "you can have people in Chengdu", but because they're paying for it, they physically want to see the people, they want to know that they are real. And I just find that the disconnect with the remote team is much harder than having someone who's on the ground whom you can brief face-to-face, whom you can iterate with, and you can sketch together. And also on the people development side ... eventually with Chengdu, your top out with what you can learn. You can learn your technical skills, but because you're not interfacing with the business, you don't learn that side of it. And so I think that there's a kind of natural limit to offshoring and what they can do, and what they can add value in.

Eric   So even with work like modelling, say I need to build a response model to cross-sell loans, that the nature of the work, one would argue, is actually very precise; if your made the problem statement for what you want to solve for, it's very precise work. And even that [type of] work is challenging for Chengdu? That you would want someone doing that modelling work to be embedded within the business? Sitting with them side-by-side to build that model?

PAR1   I think something like that you can effectively outsource it. That one is very 'black & white', very simple. I think that's ok. But if it was something more ambiguous, for example, a segmentation or cluster analysis type of thing, where there's a lot of discussion about ... "Here's what I see but I don't know what's significant and what's not ..." If you're offshore, I don't think you can do that very easily. You have to be the guys in the team here, and also in the business and say, "Here's what we found, what do you think?" Like we were doing one [segmentation] the other week where it's a factor analysis; it's about an affluence indicator; lots of different attributes predicting affluence effectively. A lot of iteration with the business about what we think the relevant factors are that are driving it. And if it was offshore, I just don't think you could do it. But a simple response [model], yeah, you could do that.

Eric   One can argue they could have the discussion on the call.

PAR1   Yeah, you could. We have video conferencing [capabilities]. But it just doesn't … I just don't think your get the personal relationship. A lot of like our RM model is very personal. "I know these people." And you have the rapport. I always find it [rapport] harder when your offshore.

Eric   So even with video conferencing, that rapport is difficult to build?

PAR1   It could be [a function of] the type of people I have in Chengdu. Cause they are all … Masters of Statistics …. they're all very dry; the English isn't 100% great. So building the relationship with the business is harder.

Eric	You mentioned that your RMs and their associated analysts sit with the business. So your team is scattered. They're not seated together?
PAR1	In the early days, they would spend about 2 days sitting with the business. Now, they actually spend almost all their time here [not sitting with the business]. But the RMs spend their whole days in meeting effectively. So he's … like after I finish with your, I'm with the Malaysia segment team, and then I'm with the cards team. So he spends the whole day ... either they come here to see us or we go to their floors which are elsewhere in the building.
Eric	How does your team, then, as the 38 people, come together to knowledge-share or to sort of … digest; the staff needs to come together to collate …
PAR1	Good question. So there are 3 main verticals. Each vertical has a team meeting. At least on a weekly basis. They all sit together in pods. So the Wealth team will all be together, the Cards team will be together.
Eric	Including the RMs? The RMs and their supporting team?
PAR1	Pretty much.
Eric	They move as a group?
PAR1	Yes, they are like a gang. You'll find that they're very tight. They'll go lunch together and things like that. So they'll have their team meetings. Within the team, they all know what's going on. Although they sit with each other; so they know what's going on anyways. On a monthly basis we have a department meeting where China and Malaysia will also dial in. We can do it in here, we can open that door up and it goes all the way down. And we do what we call 'vertical sharing' every department meeting. "So, Wealth vertical, what are the cool things you've been working on?" They'll share it with the other guys.
Eric	Because they've become so tight … do you have difficulty trying to rotate people across? Because I mean if someone [internal] has to replace you, he probably would have had to do time across the verticals.
PAR1	Yup, probably would. And we do rotations. Probably about every 2 years, we've had major shifts around. At any point in time, if people want to move, they can just approach us and do it. Like one of our Credit Card vertical guys … he's the one who then rotated into doing the HR Analytics.
Eric	But because of the pod structure, is it difficult?
PAR1	I don't think it's difficult. Like Pod A sits next to Pod B, and sits next to Pod C … Like we were in Universal Studios on Friday, it's 30 people. It's still [BI&A function]. It's still one team. It's not a me against you type thing. But you can see that there are definite strong loyalties and friendships to each other. But also across the vertical, I think.
Eric	So the Analytics team sits together … well, they may be in pods, but actually, they are together. And then when they need to meet with the

business, they go together. And then they are sort of embedded with the business 'X' amount of time and all that. So they sort of have 2 offices - the offices here ...

PAR1   Yes, office here and then meeting rooms would be their other …

Eric   Where they spent more of their time …

PAR1   Yes, they spend most of their time finding out [from the business], "OK, what is your problem?" And then, "Here is what we think the answer to your problems might be. Do you think that's the right one?" And then it's iterating the solution. So we do spend a lot of time with the business for sure.

Eric   We shift gear a little bit … are there stuff you get criticised for? It's either inaccurate or irrelevant. And they're different, right?

PAR1   I looked at this. Your first question was "What are the measures of success?" And so … in my KPI and the KPI of my one-downs, there are 4 real areas. We look at productivity of the team - so, how much are we actually doing, how many requests are we handling, how many requests per person ...

Eric   And being able to turn it around those requests?

PAR1   Yes, making sure we are efficient. And we look at accuracy within that. So how many complaints do we get in terms of, you know, us messing up a campaign or the business coming back saying, "Hey, this is just wrong!" So we measure those things. And shadow revenue. So we look at how much revenue we are generating ...

Eric   From the campaigns?

PAR1   Yup. We look at satisfaction of internal clients. We do anonymous survey to all of our main users - 150 users a year, asking about 20 questions. But the main question is, "Does [BI&A FUNCTION] add value to your business?" And so we track on that; you know, how are we doing. We also ask them things like, "Are we easy to deal with? Are we proactive? What are the forms like? Are we timely?" So we understand the process and where can we improve it. That's the 3rd area we do it. And then the 4th KPI is building the capability; so we have a number of projects every year ... to build the platform, build internal products, making sure we tick off those things.

Eric   But if you had to say one single thing that says, "How do you know that you are damn successful as an Analytics team?", what would that be?

PAR1   Well the one we always quote is the shadow revenue. Because once your say that there is a financial output from your business, then people are like, "OK, yah, I can see that you really add value to the bank." That would be the one we would typically quote. But, knowing that our internal users are giving us a 3.6 out of 4 for "Does [BI&A FUNCTION] add value?" and it's trending like that, tells me that we're doing something right for sure. If we were getting a '2', then I'd be really worried. If your asked us 10 years ago, I'm sure we would be getting a '2', because we were irrelevant and off to the side. So, those are the main measures. Do we get criticised for inaccurate stuff?

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Very rarely. The reason being that the process, analytics and campaigns, has a robust QA [quality assurance], so everything effectively has a maker, has a checker.

Eric   They sort of double-hat each other? If your make, I check. If I make, your check?

PAR1   Yes, effectively. But because you have the whole self-service analytics that's out there as well, it's very easy to check it against another report, another source to see if this is in the right ballpark or not. Very rarely do we get any questions. Also a lot of things we've been doing for so long, it's standardised. A lot of the data, the data model, the metrics, the queries ... they're all pre-built. We're effectively picking up and just re-using a definition that already exist out there.

Eric   And data governance piece sits with you? Or it sits with IT?

PAR1   Bankwide, it sits … we don't have a single owner. We have a data governance office and they chair a committee. And in that committee, we're [Analytics] one of the main stakeholders. Because a lot of the data we use is transactional data, it's pretty accurate. And we also do data quality measurements on behalf of the bank - it's a lot of these scorecards - population of key variables ... we'll do that for them. But within our team, obviously we have a lot of [data] transformation that we do ourselves. We transform it once, it sits in some standard tables and people are able to pick that up in their queries without having to redo everything every time. And so that's how we manage to make things accurate; because at least we try and minimise bespoke coding as much as possible.

PAR1   On your irrelevant one … coming back to inaccurate … last year we did 1,600 campaigns. We had one where there was a complaint that we messed it up. Accuracy is pretty good. And irrelevance … very rarely. Like I even said, "Never", in my notes.

Eric   You've never like gone on to build a model or a segmentation, and the business came back and said, "Damn it, that's not what I asked for."?

PAR1   Yah, not really. Because the RM is there and he spends all the time … "What's your problem? What is it that you are trying to solve?" And then, it's very rare for the business to say "Build this for me", it's the RM saying, "OK, based on your problems, this is what I think your need." And the business is like, "Yeah, sounds like it." And then we'll go build it.

Eric   So you seek convergence already before your go ….

PAR1   Yeah! It's kind of like Divergence - here's all the possible things we can do, and then Convergence - ok, this is the one we're going to do for you. I think that's how it works. Whereas if it was just the business filling in an email and sending it to us, and we take that and, "OK, let's build that.", then for sure there's going to be interpretation of the request that may be wildly different. Because we sit there and we effectively spec it out with your already. And then he [RM] briefs the analysts, and the analysts gives it to the RM, and

"Yeah, that's what I wanted.", and goes back to meet the business. Very rarely is there irrelevance.

Eric Now that ORG1 has expanded regionally - Malaysia, Indonesia, etc., technically, the Singapore-based team is seen as the offshore team, in some sense, to the other countries.

PAR1 Yeah, you're right!

Eric And do your see the ball getting dropped because of dilution in the communication?

PAR1 That's a very good question. So Singapore is our main office. 80-85% of our money comes from Singapore. Malaysia used to have its own analytic team. And we took it on. And the way we work was effectively to deploy some RMs in Malaysia, all the work got done in Singapore. So the data comes across the border every day and we send the [campaign] leads back to them ...

Eric The RMs are there?

PAR1 The RMs are there figuring out what should we be working on. But that does give your challenges. The briefing process between the RMs and the analysts …

Eric Because they don't have this pod anymore …

PAR1 Yes, and so over time, we actually evolved that a bit. Because the RMs in Malaysia are saying, "You know, because I'm offshore, sometimes you are not as responsive as you should be. Some of these requests are quite easy. You know, can I do it myself?" And so in Malaysia, we've also now deployed a Qlikview to allow the RM to answer a lot of the queries. Allow the business to answer a lot of the queries. But we've also given the RMs some technical skills ... some basic technical skills. So if a basic request comes in, then they can actually do it themselves, locally.

Eric But what prevents them from having their own team there?

PAR1 Because it's all controlled by us.

Eric But you could still control … I mean the structure is still yours. You could still control it.

PAR1 Yes, they used to have a team there, but all the data and all the tools are here in the analytical marketing platform in Singapore. And hiring people in Malaysia … absolute nightmare! Retaining them is also very challenging. And we say it's just more cost effective if your leverage the central pool here in the central platform. Rather than building your own.

Eric But if you didn't have those recruitment challenges, would you have wanted to make a pod in there?

PAR1   I wouldn't mind more people in Malaysia, to be honest. I think in the ideal world, more on the ground there would be better. Just because then you have more face time with the business; you can be a little bit more responsive and not have the … The challenge of having a central pool is ... people in Singapore will focus on Singapore more. Cause it [Singapore] generates all the money, and it's because I meet your all the time, you're my client. Whereas if it was someone from Malaysia giving you a request, it's like ...

Eric   A 2nd class citizen?

PAR1   Yeah, it's a 2nd class country, and you're 'out of sight, out of mind'. I think more people on the ground in Malaysia is also a good thing. Although I do like the shared pool and learning from what Singapore is doing; there are a lot of great synergies there. But, more people on the ground is Malaysia would be ideal. A kind of hybrid - local and offshore.

Eric   Eric thanked PAR1 as they had run out of time. He requested for a return interview to discuss more about the configuration model. But that in the meantime, he would consolidate and transcribed the interview and share it with him.

PAR1   PAR1 was agreeable for a follow-up session. He would share a document where ORG1 had evaluated different configuration models (on paper) and how it ended up with the one they currently have.

Follow-up interview on December 7, 2015

Eric   Eric thanked PAR1 for the follow-up discussion, specifically on organisation design of the Group Customer Analytics team.

Eric   Last time you said you were tinkering a couple of different ways, whether to hybridise it or hub and spoke. The challenge of course with the off-shoring, if you didn't have to do Chengdu "I would rather not, right" (PAR1: Yes it's true). The case with Chengdu is a bit unique because you don't have ORG1 in Chengdu.

PAR1   We do.

Eric   As a branch?

PAR1   Yes

Eric   Ok. So the guys in Chengdu also support local?

PAR1   Not so much. One of the reasons we went with Chengdu was – one we are a Chinese bank. When we said we can do China, we can do India, obviously management said go China because we are Chinese. (Eric: Of course). Secondly they said Chengdu because we have infrastructure there. So actually we already had a branch in Chengdu there, lots of spare location, or space and because of Chengdu's history - military and space research that's why it became Chengdu. So the reason we needed an ORG1 location in fact

was compliance. Someone to oversee them and make sure that they are turning up and do all the compliance processes. Initially they were in Chengdu and they were supporting Singapore and then Malaysia. They actually do some stuff now for our Chinese businesses as well, but not that much.

Eric   One of the possible models that surfaced in the conversations with others that I have had is that if you are going to off-shore, if that off-shore unit also supports the local unit, that means they double-hat, then maybe that might overcome some of that domain knowledge gap. The question then, particularly with Singapore banks - Singapore is the off-shore for Malaysia, for India, for China and all others, but when we look at ourselves we don't think we have a domain gap because you are supporting local as well. So you never think of yourself as the off-shore. But actually you are for the other countries. Like in ORG3, we have experimented with two off-shore models. For example ORG3 Australia years ago outsourced its campaign and its reporting into ORG3 Philippines for various reasons, cost and language and all of that. ORG3 Philippines was already a big team supporting their own country and agreed to carve out a space [unit] with 5-10 guys but they will part of ORG3 Philippines analytics team and I'll just charge you extra for the stuff. But whatever skills my [Philippines] guys have, they are fungible. And that got up and running quite fast. Even then there were things lost in translation because the Australian business is different from the Philippines business. But it was much, much easier to manage because they flew some of the Filipinos in to Australia, just to get the context of the country but they understand quite quickly, cause they do this back home anyways. But when we off-shored it to India, Bangalore, we don't have the major businesses in Bangalore other than the BPO, so we owned the subsidiaries there. There was then a major issue because they just had no clue what banking was at all.

PAR1   Whereas our guys, when we first set it up, we hired people from Chengdu but we brought them up here for about 6 months. And so we indoctrinated them and we made them part of the team. And every year some of us would fly down there and vice versa. So we at least get a bit of an exchange that way. And they do sit in the ORG1 China office and they do some stuff for the local country operation. The issue isn't China though because our business is tiny with only 5000 customers and it's kind of private bank level. So the work they do there is very different from what they are doing for the masses here. And the other thing we've done is we've taken people up here and seconded them into the team. So there has been people who have been here for a couple of years and then gone back. So that's how we have been 'cross' doing it. But yeah, a lot of them didn't have the banking experience. There were really only 4 or 5 people with deep banking experience. They have been here for a long time and they are the ones who are kind of infecting people, and telling the others what they should be doing to make it relevant. But it hasn't been a challenge to us though, not that much. Because we are using them for more production stuff.

Eric   But ideally if you could, you would want to use them as extensions of your limbs, right?

PAR1   Ideally, yes, but I don't think we have that at the moment.

Eric	But what if that off-shore is not in Chengdu but instead, it was in Malaysia. Would it have worked out differently? I'm trying to wrap my mind with closeness [proximity] and similarities of culture, because there is a larger business there.
PAR1	Yeah, potentially might have. Because as you say they are embedded in the business and the business challenges. Although Malaysia and Singapore, we are actually quite different. Because here we are local bank and in Malaysia, we are a foreign bank. And the business challenges they have in Malaysia are significant compared to us here in Singapore. But the product, processes and the systems are the same. So yes, it would have been different. But if it were in Malaysia, the challenge would have been the shallow talent pool. And the drive is different. I find that my Chinese team is more aggressive than the one I have in Malaysia. That's one of the challenges I have with Malaysia as a people. They are more relaxed. It's a good point though. It's one of your hypothesis for you PhD?
Eric	It's not so much a hypothesis but having interviewed 4 to 5 people, it has become quite apparent that, yes, there is an off-shoring challenge. Everyone faced pretty much the same thing. The reason for off-shoring is cost. If cost was nothing, they would rather do it as close to the business as possible. But the reality of cost will always impact the decisions to off-shore. So if you have to off-shore what are the compromises and ways in which you would get around these challenges? Everyone reiterates the same problem: the guys don't get it. I'm trying to understand is there a different way these off-shore manpower could be brought in to the interaction model. Yes, face-to-face is limited. Are there procedures that could be set up, or different classes of work that could logically go beyond the operational scope that could make sense for further locations like in China or even in India.
PAR1	Possible. When you were in ORG3 though, when you had you off-shore team, how would you relay a Singapore request? How did it get from a business user to the off-shore team? What were the layers?
Eric	So the business user will never see the off-shore. From the off-shore's perspective, they didn't like that, obviously. Their whole understanding of business problems came through the on-shore analyst. The on-shore business would have a word with the on-shore analyst. The on-shore business doesn't care who gets the work done. They say, look I need this and this within this turn around and in this quality, I need this model and I need this analysis. The on-shore analyst then decides based on the complexity of the work and timeline of what should and should not go to the off-shore unit. They also have a strict protocol of either a daily or alternate day briefing. The way they have evolved over time is that, for each country that they support or even for each sub-team within the country that they support, they would have a hard pairing, one person to another person. When they first initially set up, there was only a generic pool. We have an RM in Singapore who flings the work to the RM on the other side and the other side decides who they would allocate. But the on-shore analytics team felt that they needed a dedicated guy and they need to talk to the same guy because they felt that the conversation needs to keep going forward. So they broke that model, there was no RM anymore. So they allocated this five people [as an example] who

would be dedicated to Singapore. So now you can brief them and use them however and whichever way you want. And we would have to construct the brief: ok guys this is what the business is asking for. I will do this part, you will do this part. And then let's touch base again the next day or the next 48 hours and show me what you've got. And then they would work through this iteratively. And then when it comes time to present, they may get the off-shore guys to dial-in on the conference call and say why don't you present to the business. This was one way to sort of pacify the off-shore folks and their ire for not having any direct interaction with the business folks. So this [presentation] gives them the exposure. From the business perspective, the general sense is "I don't really care". They don't like the off-shore model. I rather have somebody here that I can talk to.

| Eric | So ORG3 would be a classic example where we had minimal off-shoring in the past to now maximum off-shoring. So I'll walk you through to how ORG3 was constructed. ORG3 in the US - decision management is a global name function – in the US they set up a team in Bangalore and this is not a vendor. They actually went in, set up a subsidiary part of ORG3 India holdings, and they set up an almost 200-man team in Bangalore. Why Bangalore? Simply because it has easy access to resource because the infrastructure was good. The intent at the time was to say look, in ORG3 US they had a very big team, 300-400 people and it keeps growing. It is a large business. And the cost was astronomical. And there was a guy in that team who said he wanted to go back to India now for family reasons. They said, why don't you go back and start this up. So he started with 10, 20 and then eventually it became a 200-300-man team. And the cost in Bangalore was less than 50% than the cost in the US. In truth that cost in Bangalore was comparable in many of our Asian countries. They aren't that cheap actually. 〔□獵珇甌癭瘭籲絼紵縪襻攭峻峮覾觀譒瞖贈賭慧踾輪ù   qBtrosE Asia I can probably find cheaper, in Thailand or Malaysia. But fair enough they had some good talent. They recruited from the top statistical and business schools. That was their model. Then they would set up this whole correspondence, back and forth. Over time, one of the challenges that surfaced was that they had a fair amount of turn over. Because the guys from the top end business schools said they didn't sign up for this. I want to do more of the business strategy stuff and not handle a factory job. They ended up having a lot of IT infrastructure guys within Bangalore because they ended up building their very own data mart. It wasn't re-using the global infrastructure, they made their own. As decision management wanted to standardise the protocol, they reached out to us guys in Asia and say look India is in you back door. Why don't you go and off-shore to them? And I said hell no. Not under my watch and I had a big fight with my global boss. I said I'm just going to be blunt. I said you call yourselves centres of excellence, can you tell me exactly what are you excellent in? The guys have never really worked in banks before. My guys have at least 10-15 years' experience. Yah they [Bangalore men] may have come from the best schools, but so what? What do you have that I don't? And if you are telling me that there is a cost advantage, then where is it? I don't see the cost advantage. It is minimal for us in Asia. Hell no, under my watch, we are not going to off-shore. But we eventually did a little bit of work, maybe 4-5 people, supported some of the more challenged countries like Japan where resources are very expensive, so that made sense. In fact I went in there poached a lot of the talent, took them out and brought them here. They have |

a lot of smart guys and they want to work in the country and the opportunities came. So the global head and I had all kinds of differences.

PAR1   Heard you have been working on all sorts of projects like Project Rainbow and standardising the data. But they have their own version of the data over there?

Eric   Correct. So they [Bangalore] were never really part of Rainbow. So their [Bangalore] warehouse was linked to the US and they had a Teradata set up. They were set up as part of an extension of the US team. The US data structures are very different from any one of us in Asia. And so when we looked at them, I said look I don't think I want to use their [US] structure. Can you use mine? I can give you access to my Asia data warehouse. Don't pull the stuff out but you can come in and use some of the stuff. But they [Bangalore] have their own processes and tinkering that they have done so it took a while to sort that out. But now today, they [ORG3 Asia] are 80% off-shored to Bangalore. That's the reason I left. I disagreed with that off-shore move, I wasn't going to stand for it. The function has completely collapsed. That's why I am keen to pursue this in the PhD. I knew it [eventual collapse of the function] would happen, but I wanted to know if it could have been done differently. Despite the collapse, every bank says they have the financial pressure to off-shore and I don't want them to make that same mistake. So we lost a lot of good talent in the country. Because the country became a representative office as they say they got no real work to do so they went to work for local banks. But at the same time, the Bangalore guys couldn't replace the lost talent. Even the reports were not right. The campaigns were not right. And they allow the business now to interface directly with Bangalore, and the business hates it cause there is no face to a name, the instructions are not followed correctly.

Eric   Part of the argument that I am making is that all these problems / issues are partly cultural – people say you are being racist and all of that. But I have this theory that the two existing big BPO countries – Philippines and India, and of course China is beginning to catch up – I think within that range I think China will win, the cultural difference between Philippines and India, anything to do with operational stuff the Filipinos are really good. They have zero creativity unfortunately. But they are very compliant, very meticulous and great attention to detail. And if you've got an SOP and need you campaigns to go through this checklist and need you reports to be this, the Filipinos will do it perfectly and to the extent where if you need changes, you have to file all sorts of paperwork because they are so anal about it. And they do the job well. Predictable. On the other hand with the Indians, the Indians can't do anything operational to save their lives. if you look at their country the entire mentality is about taking short cuts. They pride themselves on their creativity. It is the only country where I send them a spread sheet and I have to say ok guys please don't modify. I just want to collect some MIS from you, fill up the damn spread sheet and then send back to me. And I'll lock the spread sheet. And the Indians will find a way to crack it and say sorry sir we have to create these extra rows, and we have to change the definitions. Because we are different.

Eric   And it is true. It is the only country, always, that will modify the spread sheet and send it back. Cause they just can't leave it alone. And if you give them

operational work, I just can't see for the life of me, how they are going to do it and do it well. because every time they are doing that process, somebody is thinking how can I do it a little differently. And they just don't have the rigour of logistics management and things break very quickly. But they are very good at the advance analytical creative solutions. So I say look I need some minds to think about this problem, they can do that and come back to you. And maybe leave the operationalizing to the Philippines. But because the off-shoring that ORG3 wanted to do was in campaigns and MIS, I tell them look, if you go to India you are just going to screw yourselves. Because culturally it just won't fit. Of course they took offense, they say Eric you are racist and all.

PAR1   Oh no I get you. India will never work for us. We are such a Chinese bank and being open, they are just a clash. Even in my team, the Indians and the Chinese, there are underlying tensions all the time. If my business users had to pick the phone to speak to someone in India they wouldn't do it. They really wouldn't. Even in interviews, it's very rare for an Indian to be selected for a business role due to the cultural challenges. And if we are like that I would imagine ORG2 would be worse.

Eric   ORG2 has no Indians at all, completely Filipino-based.

PAR1   ORG4, they seem open. ORG3 they seem open. ORG1 - due to our heritage - is very Chinese centric and outside of IT there is not a lot of Indians in the business. Philippines I think would work, especially now when we are using the off-shore for more kind of execution, I think the Philippines would be go, plus they speak English (Eric says this and PAR1 agrees with a yeah!). And they have proactive personalities too. Whereas my Chinese guys are very deadpan and they'll ask what do we want and we tell them what we want and they'll execute it. They don't have a lot of friendly interaction.

Eric   The Chinese the challenge I see culturally is that they are ambitious. Which is good for them. No fault of their own. They are looking to see how much can I extract from this relationship that will benefit me so that I can propel myself subsequently. So there is zero loyalty there. Whereas the Filipinos don't like change actually. The minute they get into a routine, they are very happy and comfortable to stick with that even though it's not pleasant, they would still not want to change.

PAR1   That's probably true. Although my China office is different. Because we went to Chengdu on purpose. But if had gone to Shanghai, that would have been different. Cause they would have wanted to get the skills and then move on. But in Chengdu there wasn't a lot of options, it's very family-centric. So the people there, they tend to get the skills and they tend to grow their skills but the churn to other organisations is very low. You can work for us, you can work for the military and ORG6 - but there's not a lot of options. So people aren't aggressive, from what I can see. So that was good for us. It was purposeful decision. We did look at Shanghai but Shanghai already in 2007 was already cut throat. We realised that if we go there, we would be fighting the same talent battle all over again. So that was the other reason Chengdu won.

Eric	I enjoyed working with the Chinese. The biggest hurdle was the language. But they are actually quite sharp and they can think about the problem quite deeply.
PAR1	And they work. They have got a good work ethic as well. And their English is getting better. I look back at the people I used to interview back then and now, chalk and cheese. We interviewed 10 from NUS or was it the SMU. No the SMU they do an exchange with the Chinese university. We interviewed 10 of them last week and I'd probably say 5 of them had good English, had a sense of humour, so I can see them fitting in.
Eric	We tried to create a small COE in Russia as well. So they had about 5 - 6 guys for very advance stuff and they treated it as an extension of Bangalore. So Bangalore didn't just become a location-based Centre of Excellence, but then they could branch out to innovation lab in Dublin, do it in Russia and all that. So they had 5 guys in Russia. And of course, these 5 guys in Russia were thinking all of you are just idiots. Because they are quite smart and all of you are just idiots.
PAR1	So did it work out or not?
Eric	They could do some very interesting stuff, very high end stuff, they would pass it to the Russians but language again was the main challenge. But they were fast, the Russians could code and turn around the work very fast. Much smarter than the Indians and the Chinese put together.
PAR1	I believe, ya, Russians are good. Cool. Ok what else you want to know.
Eric	So in the last conversation you mentioned that you were trying to evolve your organisation design. So now with Chengdu and clearly with ORG1 expanding locally and regionally, the analytics team of about 38 people, would eventually have to expand. Ideally to 40-50 people and all that. And the expansions come in two ways as I see it. The stuff that is operational would eventually be systemised, probably with investments in the IT. But again if you go to the big data space, new emerging technology, it would be hard for you to immediately systemise it and you still would have a bit of the operational stuff. But then in the space where you are trying to grow now, the human capital analytics and all the exciting stuff, how would you begin to supplement your resources, or re-structure the team, whether it should be vertical, or generalist, or it should be multi-country hubs and how does Chengdu fit into all of that? Interesting to want to hear your thoughts around those things.
PAR1	You have hit the challenge on the head, I guess. The BAU stuff is BAU now. We have no issues with normal analytics. I think in each of the countries our model is pretty solid. Our challenge is definitely the emerging verticals. I found a graph in fact (shows graph). This was the slide we did when we announced the new structure to the team back in 2013, 2014. Basically we've done it, we've created effectively in to three major verticals. So we have Singapore which is still our home country - wealth and segment, lending and channels, and then we have the regional team.
Eric	You club all this as one vertical?

PAR1 We club all this as one vertical. Because all of our regional businesses are small. You know Malaysia, I think we have 500,000 customers. Only 10% of ORG1 consumer revenue comes from Malaysia. China is tiny. China is like 5000 customers, its minute. NISP, our Indonesia operation is big but legally we can't transfer the data across border.

Eric But they are really suffering because they can't get access to this data analytics there.

PAR1 Yeah they have their own team but it's really basic. We leave them there to be honest, because we've expanded a lot of effort in the past years trying to get them up the curve and soon as they get the skills they leave. They move on to ORG3, or the local banks. I have other customers who are more willing customers so I'm just leaving them there to be honest. Wing Han is the bank we just bought in Hong Kong. Wing Han has a lot of opportunities at the moment but because it's nascent and we are just doing pilots to show them the value of analytics I can leave them in there for now. It is almost like a side project.

Eric Sorry to interrupt you. In some of these new banks that you've bought, so you say I want to try ram them up in analytics. Will it make sense to pilot already the big data stuff? Rather than the traditional analytics?

PAR1 Yeah I'll come to that in a second, how we're handling that. With Wing Hang, they literally had nothing. They didn't have any customer profiles, they had no campaigns, so it was just low hanging fruit to be honest. And you have a management team there, typically aged 50+ that are old school traditional bankers. We are just putting CRM infrastructure into the branches and they are ten years behind. So you can build them a big data, like giving them an atom bomb. But they have no ability to handle it at all to be honest. In some ways we are starting very simply there. But I think we will miss out on a lot of the middle layers of evolution and hopefully leap frog at some point. Some of the other vertical customers that we've added - Wealth is the main one here, Lending is the main one here. But there's a lot of other people that get us through the works, our securities business, our [xxx] business, our HR business. For now what we've done is we've put them into existing verticals. Because it keeps life interesting for the people who look after these teams.

PAR1 [xxx] for example looks after this [HR]. If he was just working on credit card, [xxx] would go crazy. So he looks after [xxx], he looks after HR. But these at the moment are small pods, you know, two or three people.

Eric And they are still treated as almost separate pockets of work? As opposed to leverage on each other?

PAR1 They are teams within teams - so if you look at [xxx]'s team structure, you probably have [xxx] and then he has got the Lending pool, then he would have his HR pool, then he would have his [xxx] pool. So he kind of build it like that, he kind of has his own miniature plate. But as some point if these gets successful and they are going to get big and then we've got to look out what do we do, do we keep them within the vertical or do we spin it out as a

separate vertical. But at the moment, we haven't got to that level, to be honest. So I'm using it as a way so that these people, they are not typically not HR analytic professionals, they are traditional analytics guys that came from here, or came from here. At least embedding them in the vertical, they get at least some kind of interaction with other people. If you are just sitting in this thing you and one other person and that's all you are interacting with, you are going to miss out on a lot of knowledge and a lot of experience. At least here, they can see hey that's what the credit guys are doing, that's relevant to what I'm doing in HR analytics.

Eric   But I'm sensing that you, because this is very stable, I'm sensing you have hit some kind of wall, or some ceiling in the vertical approach. I mean the vertical approach is great for depth, for domain strength.

PAR1   Yup, it's good for efficiency as well.

Eric   But it's poor for, if you want to take analytics at an enterprise level. It doesn't scale. You can go very deep very quickly. But you cannot scale. And you are probably hitting some kind of ceiling to say if we want to scale, if I have to now double the team and you have shown good ROIs in the analytics, and I'm sure this conversation will happen and someone would say double the team, you wouldn't want to do it this way again.

PAR1   I probably wouldn't.

Eric   Ya, and the challenges, but if you invert the entire thing and look at it horizontal, would that necessarily a good thing also. There are some banks which are now moving towards a complete generalist structure. And the way they are arguing, and it's interesting because part of the verticalisation, even verticals within verticals, so let's say even in Lending and all that, many of the banks say we'll split MIS from campaigns, from the advance analytics and all because there are different skill sets. But you needed to do that because you needed talent and sort of tension to be able to build up processes around campaigns and MIS. But as these things now become standard and become automated, do you really need to keep those same vertical campaigns and MIS. They used to consume 80% of the time so the idea is to hive them off so that you can focus on the value add. But if you systemise it all, they actually now represent only 10% or 20% and logically everyone could go back to becoming a generalist.

PAR1   That's kind of the way we work though because in our old model people were specialists. I am the analyst guy or the MIS guy as you said. I'm a campaign guy. And I'll work across all the different client groups on the analytics. But people eventually say I can't be unit my whole life, I'm going to get bored. I want to interact with the business, I want to learn how to build models. I want to learn how to build Qlikview reports. So our verticals are not functional [based], they are client based. So you might sit in the wealth vertical but you will do the analytical roles across the entire spectrum. You will meet the business, you will build the model, you will run the campaign, you will do the MIS report afterwards, you might build the Qlikview report. By vertical we mean you are dedicated to one group of clients, it's not saying you are just doing analytics for example. So we purposely in the last three years have been cross-skilling our guys so that they can do all these

things. So when you meet the customer, you'll understand his problem and end to end you solve that problem, rather than building a little piece and then throwing it to someone else. So that's how we've changed it. We did look at it and asked should we make it skill-based or client-based. So ours is client-based.

PAR1   The challenge that I am having at the moment is – this for me is very scalable, you know, and Wing Han, if they came to me and said we want you to build us a team, literally I can build my RM here, and I can add my three or four people just to do Wing Han. I can easily bolt on additional client groups, it's very scalable. Where I am having an issue with it today is that some of the projects I have on the horizon. So things like the machine learning for example, where would it sit? So that's a perfect example – big data. So here we are, we have done our POCs, we've approved the values of some of these tools and the bank has invested in it. Now we are figuring out shit, where does the big data lab sit. Does it sit in here, some in here, or some in here [points at diagram]? Or do we separate them out into separate team that just do experiments for a year. Those are the bigger challenges that we have at the moment. Some of the big projects next year – machine learning, big data lab.

Eric   In some sense its basically an innovation vertical, you will always have something new. Because once you have covered the big data and machine learning, something new on the horizon will come.

PAR1   Yeah so where does it sit. Previously you can embed it here like a stretch assignment for these guys. But some of these assignments - now like digital marketing is another one, you know the web analytics and the digital campaigning, digital analytics. These are big things. Unless you give it some specific focus you are not going to do it to its full benefit. So if he is doing it in his spare time, we'll never become experts in digital analytics. So that's one thing that I see in the next 12 months we have to evolve and restructure again to be able to tap in to some of these bigger projects that are coming along.

Eric   And this is just pure discussion, I'm also struggling with some of these new ideas. Let's take machine learning or big data, there is a tendency that we look at these as an IT infrastructure play first. So find me my most IT capable person in my team, so you will lead it and find out the process interactions and all that. But the other way, if it's inverted and say look you are successful today in your verticals of Lending and Wealth because you have always work with the end in mind. Meaning you come to me with a business problem, I don't always have to be able to solve all your problems. Those that I can't I'll will then sort of marshal all my resources or tweak my data models accordingly, so it grows and evolves as the problems sort of influence it. And with some of these new stuffs like machine learning and big data should it be led by having the problems in mind first. And say we don't know what the end state would be like, we don't know how big or how small the entire machine learning platform will be. But just tell me the problem. If I need to build a recommendation engine on merchants and credit card spending, how would I build this recommendation engine on machine learning? It could still sit within [xxx] and say here's the investment you tell me whether you need to have a little space within the existing

infrastructure or you want to, you know, integrate with it. But you come back and tell me how will I bring machine learning to solve only this problem and have them replicate enough of that and whether eventually can that then be generalised.

Eric Cause if you look at how data models evolve, it really started like that too. And then you generalise to say there are commonalities around the data models and therefore there can be a larger one.

PAR1 The issue I have though with my machine learning problem at the moment is not just Lending specific, it's replacing our CRM system. It's an Omni channel system across all channels and we keep all our business cases, intelligence, next-best-sales, -services, -engagement offers across all the touch points. So it's all the channels, all the products from day one. So we give it to [xxx] and [xxx] only covers a tiny section of the offers that will be in there. It's going to be all segments will be affected by it. So he'll have a stake, so I need to find some capabilities that will go across all three or it's separate as a side. Also ultimately once you build this, this is going to start affecting the work that these guys do because at this moment they are so used to doing campaigns, whereas women aged 30-35 living in Bugis, that's how the campaign is going to disappear cause in the future people are going to say actually I want to use the machine learning model, the one you are recommending on the in-bound channel, I want to use it for out-bound.

Eric And it runs by itself.

PAR1 So it's going to change the way these guys are working in the future. So I also need to think about that. Can I take people out of these verticals to build this thing so I know ultimately you are not going to need these people back in these verticals in the future because some of the work is going to disappear. So that's a big one for us at the moment.

Eric The challenge also in the machine learning is sort of two spaces. One is having that platform say Mahout where you can run the machine learning- it's not a nice sandbox like you have in SAS where you can build, test and all that. Where many people are not familiar with machine learning codes themselves - it's very hard to just cut and plug and play. Almost all machine learning requires modifications because it is contextual to your data and your problem. Then the larger question that no one is still asking is how do we track and assess, the way we look at campaign ROIs in the traditional way, test and learn or incremental, all changes. Because this is just running, real time. How do I know when it is not working?

PAR1 Yah. True.

Eric And the skill to be able to sense that or to ping the system and realise that I have sampled it and that there are some customers who are actually not doing what it is supposed to do. It is not immediately obvious in the way that the campaign assessment is designed today.

PAR1 Yeah, sure. Even just sketching it, the complexity of being able to sync traditional off line campaigns that people run with what the machine is recommending as well. The business is saying, ok, great it is good that the

machine is recommending this but sometimes I have a strategic campaign I want to send out bound and I need to be able to sync that somehow into your machine learning, so it also recommends it there. There is a shit load of complexities in the scenarios when you get into it. Frankly I don't have a lot of the skills for that at the moment. The guys in my team, they are so used to building normal models, running Unica and things. They are operating at a 6 hour to 10. I need to get some new skills to be able to do that properly. So that's my challenge in the year ahead. This is great, one, for engaging the business. The business has one person to deal with, they don't care if it's done in Chengdu or who in the pool is doing it, they deal with the RM mostly. This is great for efficiency, it's great for understanding what the business problems are, and second guessing what they are going to want. But now I am dealing with bigger problems like this, there are multi, multi verticals and that's where I'm hitting my wall I think.

Eric   And how does this model also allow for succession planning?

PAR1   One of the reasons we have evolved from this model to this mode [points at models] is because people were sitting here and there were saying I don't have a career path. I come to the team as Manager 6 Unica developer and if I'm lucky I'll become a senior Unica developer. But typically people were not moving from here to here [point to diagram]. Because these people aren't interacting with the business, it's all going through the RM, they weren't getting the business facing skills either. So they are pretty much stuck here [point to diagram]. You stay here forever or you go to ORG4 you do the same job, pretty much. So that's why move into here because they say I want to interact with the customers, I want to learn to do all the other parts of the analytics process. So definitely within the team, we see more within the actual doers, we see more progress here because they have more skills and they are learning new things. Eventually, if you are lucky you'll progress to be the head of the vertical. So at the moment I've got Kasper, I got [xxx], and I got Xing Yan. You kind of have sub verticals there too where people are getting some kind of management skills, you know the head of HR, the head of [xxx], at least they have some people reporting to them. And then for these guys [Kasper, [xxx] and Xing Yan], their opportunity is either to go up to take my job which is tough - almost like Dead Man's Shoes [laughs]. .

Eric   And then the more you verticalise, the harder it is. They can rise to the top of the vertical but then very hard to lead multiple verticals because they don't necessarily have that breadth anyways.

PAR1   So that's definitely a challenge. There are options within the bank, so risk analytics for example, they would take one of my guys in a heartbeat. [xxx] at the moment they are looking for head of analytics, they are asking do you have anyone here who could take it. And externally, frankly the people here, they could be the head of analytics in ORG2, no problem. Could be the head of Stand Chart. But in ORG1, I'll be honest, if you were [xxx], its limiting. Unless I get hit by a car when I'm on my bike, then I do worry about it. But that's a challenge in every organisation really. Eventually you get to a certain point, where there is really only one position above you, unless you move laterally. But yeah it is a challenge. But I've been here 12 years and you know, I like it, so the odds of me leaving in the short term are small.

Eric	Amongst the local bank I think you've built this into one of the leading analytics team. Given the size and the kind of work you do, you can see people are proud of the work they do. Versus ORG2, isn't. ORG4 is enjoying the rays of glory from the larger business but analytically it is still nowhere.
PAR1	They have great ambition and great funding. But at the moment, it is not realising the benefits that it should be. Definitely. If Watson had worked, then maybe things would be different. But at the moment I think it is a bit of a black cloud.
Eric	So you are in a good place. ORG3 has collapsed.
PAR1	[Multinational bank] everyone is leaving and going to ORG2 and things. Yeah at the moment there is not a lot of competition to be honest. But things are changing, like look at the new NTUC job, have you seen that? I think NTUC is about to hire head of data monetization. I think it's the chief of analytics officer.
Eric	You've got some partnerships between ORG1 and NTUC - I know from [xxx], he was telling me they are trying to bring all this data together. He asked me whether I would be interested in that. [xxx] and I are ex-ORG3 and we were trying to do some work for him in [ORG1 Indonesia] because they had a risk collection black hole. My guys are Indonesians so he figured that it may be easier to talk, locals to locals. But he was also telling me about this partnership, he was having with NTUC. He said NTUC has data and ORG1 has data, there's [xxx] and all that. But no one party can take the other because of the legal entity differences. So he was trying to put together an RFP, can a vendor help manage this bring in all the data and build some recommendations, analysis and all that in a common area. My feedback to him is that there is no one single vendor who can do that. And he probably needs to chunk it out, take the best of breed. I mean if you bring in the likes of IBM, they will give you infrastructure but little else. If you bring in the likes of Accenture, they will give you all the nice soft solutioning but you won't have any real processes to run it.
PAR1	Actually [xxx] is wrong. I can get the data for all these entities and legally I already have it. Issue is I can't share it back to [xxx]. Because he doesn't have the permission from [xxx] customers to be able to use it. So me, I have it sitting right there, and [xxx] actually knows that. He is just frustrated that he wants to do certain things and I say sorry you can't do that. Legally you are not allowed to. That's the challenge. Now the NTUC thing is something different. I believe the NTUC is about to create a chief analytics officer role. It's the Fairprice, the NTUC organisation link and effectively bringing it [data] to a central pool and monetising that data. And again, my guys would be the obvious person to approach for a job like that. So there are definitely options in Singapore. People are getting it now. They are waking up. But within ORG1, that's limited. That's why I try to give them new things, to look for new developmental role. I always try to push the envelope, so people learn new things and that keeps them interested. Yeah you can go and be the head of ORG2, but you are going to be where you were 10 years ago. You are not going to get stuff like this for another five years. We always have a plan what are we going to do to engage our talents. Even if the

business isn't asking for it. In many cases, the businesses aren't saying "hey I want you to do these experiments.

Eric   Of course, and it shouldn't be their job to ask for this.

PAR1   Yeah, they are just here to say "here's my problem". But even for some of the problems they have I could solve them with the traditional stuff. Its more for our own interest. Cause we know in 5 years that's where we have to be. Let's do a little bit now.

Eric   So coming back to organisational design. So if we say hub and spoke, all banks in any way will regionalise in some form or other, even though you are based in Singapore, you will continue to grow out of Singapore. This is the only way to do it. So if you are only supporting Singapore then Chengdu makes sense. if you now, let's say, are expanding into 10 countries, let's say with the ASEAN opening up next year with the AEC and you'll have as a bank, a significant presence in all of ASEAN. How would an analytics team be constructed to support ASEAN?

PAR1   I still believe in the sense of infrastructure, we did things right. Bringing in the data from each country into one central hub, one central data model, one central set of tools. Personally I think that's right because it allows us to build things in one country and very quickly do the same dashboard campaign or model for another country. I would probably maintain that. Whether I would have a central team that uses that central data source – I don't know. I might put more people into each country. Maybe establish a minimal, viable set of things that each country has to be able to do. You know, basic analytics. You have to have the segmentation model, you have to have this type of profiling. I might do that in each of the country so that someone is actually on the ground interfacing with the business which you are going to have to have, but someone there who is able to do the basic data stuff, maybe two or three people in each country. But then I would still have a central pool where you have your overflow and just handling a lot of the production work. And that could be in Singapore or that could be off-shore.

Eric   Would modelling be treated as production work? This is also a debate we had recently. The Australians believe yes. So the Australians said, "why do we need to have modellers in Australia. Can't we throw it all over to India? We know what we want to build, and we don't need to have the resource here. We just brief them, they build it." I had a different opinion. I felt modelling is more art than science. There are many ways to skin the cat. To say I want to build an attrition model or a cross-sell model, you can look at the problem very differently. And a good modeller would be able to incorporate the context and the domain and tweak it differently.

PAR1   But if you go ASEAN-wide, you are never going to find a good modeller in every country. I personally, I would centralise that and try to use one group that does it for each country. You still have the RM in each of the country, you work with him when you are building the model. And it may not be as accurate as your approach but it would be good enough. And if he builds it first for Singapore, he can easily take the learning's and what works for that and applies it in each country. I think you could do a lot faster if you had one

guy or one small team of people that are doing it for all the countries. Cause there will be a lot of commonalities I would think in the variables driving it.

Eric   But at the same time, by allowing the countries to have, let's say their own modelling team or their own solutions team, one can argue that that can become your innovation lab. This was what I saw in ORG3 also. So when they pushed me to say look we want a lot more standardisation. I said its fine if you want to standardise campaigns from an infrastructure process, just to make sure the authority and the approach to campaign design is the same, I think I would agree with you. But to say that now I have a balcon [balance transfer] model in Singapore why can't I lift and shift and apply in Malaysia and Thailand. I said I'm not sure. Not to say that if one works you shouldn't share it. I think the sharing is great. But it shouldn't prevent the country from also doing their own stuff. The reason we have something that is great in Singapore is because Singapore had the space to do it. And you may find something similar in Malaysia that we could take, or something similar in Thailand that we could take. By having this in-country presence, however good or bad the talent may be, sometimes this new innovation comes out, it is the price for new innovation.

PAR1   Then I would suggest in each country you would have a few small people. So you've got the RMs there to interface with the businesses and some people building the basic minimum level of analytics a lot of the adhoc queries they would handle that. I think from that, because you are interfacing with the business and you are getting the business questions straight from the business, some of the ways you respond to that would be innovative because you are doing it yourself in country. But I just think building the models – you are not going to have the depth of talent, you are probably not going to have the time to do it, and I think there is more value if you do it centrally and you can learn from other people. You will still get some innovation from having people on the ground there, dealing with the business, understanding their questions, responding back and in your monthly department sharing you show this is how we do it, this is how we do it. It might stir up some ideas. Putting a model guy in each country – your talent is going to be so limited that they are going to end up doing basic shit and not getting to do the real modelling and the real analytics they've been promised in the job interview. And I think they will get frustrated and they would leave. I would pull it out. But I definitely would have some talent on the ground in each of the country to allow us to be more flexible.

PAR1   If I look at my Malaysia model, we first adopted this in 2007, they used to have a team in the old days before we took it over and what happened was we effectively disbanded the Malaysia team. Left two relationship managers on the ground and all the analytics was done here in Singapore. And eventually the pressure came from the Malaysian team and they were saying "hey its great we are meeting the business but can we get some data and some empowerment for ourselves to answer the questions." And so we scaled up and we cross-trained them and things. And now they are much happier and they can do some of the basic analytics themselves cause they can turn it around in 10 to 15 minutes sometimes.

Eric   But do you see the business transform also, the business outcomes improve?

PAR1	I think it's better, if I look at my analytics NPS score in Malaysia, yes it's definitely a lot better than it used to be particularly on the proactivity and responsiveness measures. As for the business value, has it changed dramatically? Probably not cause they are still doing a tiny portion of the work. In a perfect world, I'd like to have a bigger team in Malaysia but our Malaysia business just can't justify it. But definitely empowering them with some business analytics on the ground, in country, definitely made things better. So that's the model I would do in my other countries too. But not too big, I would just keep it there for responsiveness, quick and dirty adhoc type queries mostly.
Eric	Extending out the off-shore idea, how would you partner with vendors? That means the vendors represent the off-shore as well and there are significant talent out there for which you don't need to bring into your organisation from which you could leverage particularly for machine learning, new stuff and all of that.
PAR1	At the moment we don't work with any vendors. In 10 years we've only worked with one.
Eric	And that's a choice. You don't want to.
PAR1	Yeah, that's a choice. A couple of reasons though. 1. ORG1 is incredibly frugal with its money. We rarely buy any consultancy services across the bank. 2. We saw analytics as a core competency and a differentiator. We want to build the capabilities in-house and retain the knowledge in-house. 3. We know the consultancies work with all the other banks, so word would leak out what we are doing you know and people can easily take. I think 4. we pride ourselves in knowing, knowing the business and knowing what the business is trying to do. And in many ways we know the problems better than the business does, so we can answer it. I always felt that if we brought in a consultancy or a vendor, they are not going to have that linkage. In many ways they are just arms and legs that are supplementing my pool. And if I want arms and legs I can buy them from my Chengdu office very quickly.
Eric	But not so much vendor in terms of a contractor but a vendor in terms of a partnership.
PAR1	Like in the past, the problems we were handling we could handle them in house. I think coming back to our scenarios here. I now have scenarios where I don't have the skills. And then the question is what's the best way to do it? Do I build partner with other people?
Eric	But to build it on your own is difficult also.
PAR1	But then also there is also interesting things coming up. Because Singapore is establishing itself as a big data hub and everyone is saying we want to have these skills in the country. So I have people like IBM coming to me and I'm now part of the IBM analytics centre competency. And so effectively they are saying we will give you these skills, we will work with you for x-months for free to do these case studies. So I have all these people, they are coming to me and they are kind of saying we want to partner with you

because they need to get the skills too so they need a reference site. And then NUS and SMU Universities and they are all saying, so yeah there are so many options at the moment. Even if you go to IDA, I'm sure IDA would pull something out of the bag. So the days of doing it yourself or get a consultant are kind of changing now and there are a lot of other options that are out there. And then again this year we are going to figure out which of those options we are going to go for.

Eric   But none of your current organisation construct allows you to easily plug and play different partnerships. It's not even really in your consideration set. If it comes you'll figure a way. But you are not actually designing it for that.

PAR1   We are not because historically it is not something we've ever done.

Eric   But if you recognise that this is the future and part of that future is also an exchange economy then how do we sort of prepare for that also?

PAR1   Well you could say our deal with IBM, we joined the centre of competency is part of that exchange economy. We are getting their machine learning skills and they are going to get a reference site out of it. They are going to learn on the job themselves, something they can use to sell in the future. Watson, Watson would be a similar one too. Again, we are in discussion with IBM about Watson, that's another one. They [IBM] desperately need a case study that works.

Eric   They desperately need to pay back.

PAR1   Yes, we want to see does it add value or not, without spending a shit load of cash to find out. There are multiple options out there. But for the first time ever I would say yes, we are now starting to think, how do we do it? Do we work with a consultancy? And some of the vendors to say with the likes of Cloudera and things. They are saying "hey we can help you in this space and we need references. So we are willing to invest".

Eric   Correct. They started out as hardware, but eventually the Cloudera will need to evolve like the IBMs into the analytic space.

PAR1   And they are already coming to us and saying we can help you with it. What are your use cases, we can articulate those and they say we can help you with this one and this one and this one. And it is in their best interest and if they can get one successful reference here, they'll sell to all the banks. So we are kind of leveraging that. That's one of the way we negotiate with vendors. Like with SAS at the moment, we just bought their text mining, we got a massive discount. And we said we'll do a reference site for you, we'll speak at a conference. So that's how we do it. That's probably how we'll end up still doing it. You'll find in ORG1 if I write a cheque for $100,000 for IT wouldn't look good.

Eric   Correct. Which is interesting because in ORG3 – I think this is very much an Asian mind-set and that was my mind-set too. I would not want to work with any consultant. I just feel that if I could I would do it myself. Interestingly ORG3 in the US doesn't think like that. They partner with everyone. I found that interesting because they have a massive agreement with Deloitte,

Diamond Consulting that does this high-end analytics for them in the US. And they've got Axiom and different data providers. They've got a panel of people that they figure a way to work with and at any given time there is a dozen different pilots and projects running. Whether they eventually become successful or not - they [ORG3] are open to have those conversations all the time.

PAR1   But how big is their team though? With us it's also capacity. We are able to manage it.

Eric   The US team was about, when I left it was about 100 odd people

PAR1   Yeah it is not that big.

Eric   100, 150 people.

PAR1   Like another way we've done it is we partnered with the schools, like SUTD, strategic partnership with them where we take interns and things. But we've done projects with professors. Personally I don't get a lot of value out of it. It's more national service giving something back. The same with IDA and things that's why I can avoid them. I have limited resources and have too much work to do and I don't have time to do these things just out of personal interest. We only do it when we have a burning, burning need. At the moment, we'll find a way to do it, but we'll find a way to do it very cheaply. I'll be honest. And that's through leveraging relationships with vendors in exchange for PR and favours.

Eric   So maybe to not take too much of your time, just to paraphrase again, hub and spoke model is something that is possible. But in the way that the hub and spoke would work stuff that is operational in nature should be kept in the hub, stuff that requires interface with the business, not as repeatable where you want to create innovation, needs to go out to the spokes. How the hub and spoke would interface is where currently the challenge lies. You can fly people in and out for the bit of the exchange, but even through teleconferencing it is not the ideal way to keep the entire communication network humming along.

PAR1   I think the way you summed it about hub and spoke and what lends each geography is correct. Communication definitely can be better. The way we do it is we fly people in and out and people get seconded into different countries over a certain period at a time. We have weekly calls with effectively the key people from the hub and spoke talking about what is in the pipeline. Whenever a new piece of work is assigned we have daily interaction between the people here and the people there that are responsible for it. Everything is tracked in a searchable workflow system. We use a lot of messenger. We use a lot of video conferencing on the desk top. We have a video conference here. Monthly sharing, department meeting, all hands, all the countries dial in and every month we'll rotate whose presenting so for example Malaysia may present all the interesting stuff we are working on so everyone will see it.

Eric   If I may say then, part of the communications challenge today is because there isn't yet a comprehensive framework on knowledge management

PAR1   Yup which you brought up last time.

Eric   Ya, right? Ultimately is that. And if you can solve the knowledge management approach, the communication is just a means to an end to get stuff in and out. But we've not conceptualised that knowledge management framework and that's why we are sort of getting stuck in the tactical communication level.

PAR1   Yup, yeah you are probably right. I think we [ORG1] have done relatively well, our processes are well codified and shared across all the geographies. A lot of our key work products, key templates and formats again they are all shared and people follow them. But we probably do a lot of re-work, we might have done the same thing two years ago but because it is a different hub and a different spoke that's working on it, they don't remember, "oh yeah, we did that before." I said that's definitely a gap. We have a very solid file in a storage system where I can easily say I am in Malaysia and I want to look at anything I've done for e-business bank and here's everything we've done, and here's the script that we used and everything.

Eric   But you still have to read it manually.

PAR1   Yeah and you have to go find it. And we might have done hundreds of things for Malaysia e-business for the last two years.

Eric   That's where Watson can help.

PAR1   Possibly could actually.

Eric   Because that's what its good at what? Its encyclopaedic in nature.

PAR1   But then it's like using a nuclear bomb to light a fire. There is a simpler knowledge management system out there I would guess, even internal Google-type system that could find some of this stuff. Yah, I think that is the gap. One of our problems is if we build so much knowledge now but no one has a complete view of all that knowledge so we need to find a way to make easier to share. Both for the business and internally for the team. I think collaboration too, I think the collaboration tools we use are not the best. We are living on Whatsapp.

Eric   They are not really knowledge management. They are just really communication. And it's a very different thing that you solve for.

PAR1   And even tracking the status - we've built our own workflow system to understand what's in the pipeline and who's working on it and what's the status. But its relatively high level. When I was with the Russians, actually, I sat with their [xxx] e-business team at one point. And they showed me their scrum methodology, the rapid Agile development. And the systems they were using to do and the granularity of the tracking system to see where you are and how you are going with the plan. It was just mind blowing how detailed it was.

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Eric	How do the Russians think about this, because Russia is so huge? Offshore for them is the next province!
PAR1	Yes, they were working on hub-and-spoke as well. And effectively, the spokes are out in … Kiev, Minsk, places like that. All the deep analytics was still being done effectively in the centre … in the central area. There was a modelling offshore team that was in one of the other secondary cities but effectively everything was being done in Moscow. And I did ask, "How does it translate when it gets out to the frontline?" And frankly, they didn't know. Cause it's just so vast! It's a 12-hour flight to the end of the country! They didn't know.
Eric	China suffers from exactly this today. They leave the branch to do what they need to do. They say, "We'll provide you with just frameworks and some insights, and you figure how you want to translate and act on those insights."
PAR1	I think they [the Russians] are more rigorous than that. All the insights were done centrally and it was deployed via Pega [CRM system] to the different areas, and their lead execution rates were like 90%! They were really high; they were higher than ours; we were like 87% or something. And so people seem to be following it [leads from central] and their response rates were good as well. But they [central] didn't really know; they were just saying "Oh, we rely on what Pega tells us." But if you look at the response rates, they look in the right area, so it wasn't like people were going 'tick, tick, tick, tick, tick' [checking off checkboxes]. But there was clearly a challenge there. But they realise they had to centralise - these skills were so scarce. And the amount of money they were investing in the data centre - they had to have it all in one place, with one command structure. The biggest challenge they [the Russians] had was whether they made it [the Analytics function] consumer business, risk, or one centre that looks after everything.
Eric	Yes, China also has that question.
PAR1	So one of the reasons we were there was for political purposes - they were having that debate at their board meeting about, "Is design embedded in the business units or is one centre that supports everyone."
Eric	Pros and cons. I think in Singapore [ORG3], we tended to have already separated out the two. Risk is Risk. We don't even want to have that conversation. It's very obvious to us.
PAR1	We're [ORG1] starting to have that conversation. Because it's gotten to the point where the Risk guys are far less sophisticated than us, and the business is saying, "Hey, I don't understand your models. You're missing all these opportunities. Why?" And so they've [the business] has asked us [Group Analytics] to basically take a look.
Eric	That's great!
PAR1	For years, we've been saying, "They [Risk] are not using 'this, this, this'." There's so many low-hanging fruits.
Eric	They [Risk] used to claim that they are so much more advanced.

PAR1	They [Risk] are miles behind [Group Analytics] in ORG1. And so we are effectively getting a free chance to say, "Hey, this is no good! & there's opportunity to improve" (Laughs) Ultimately I don't want to do it; I don't want to run Risk but I do want to help make them better.
Eric	You get to piss on their parade!
PAR1	Hopeful I can show them things and say, "Hey, if you do this, you can get better." And so we get the glory. (Laughs) But they get all the work. So it's win-win. So we currently in the middle of doing that at the moment. But for years, we wanted that. I've also got a meeting with Audit tomorrow too!
Eric	Predictive Audit. That's a big space. ORG4 [competitor bank] is very much into it. And they've done good work, to be honest. I've met the team that they hired. Very decent chaps. They got good … they don't come from audit backgrounds, most of them come from business backgrounds, and they are able to think about it [audit problems] in a very business-centric way.
PAR1	Do they sit in Audit or do they sit in Analytics?
Eric	In Audit. So, they are not part of PAR5's [ORG4 Regional Customer Analytics head] team. They are integrated into Jimmy's … Jimmy who heads up [Group] Audit. They are part of Jimmy's team.
PAR1	OK. Cause that's my concern. If I go to this [Audit] meeting tomorrow and they say, "You're the Centre of Excellence, and we want you to do our Audit Analytics." Frankly, I don't want to do their analytics. Then all the people won't want to share their data as freely as they used to because of our affiliation with Audit. It makes me the bad guy.
Eric	That is true. The element of trust.
PAR1	So I have to avoid that one and say, "Yup, it's an interesting area. We'll help you conceptually with it. But we need you to do it yourself."
Eric	You can leverage the same infrastructure or hive it off. You can seed it with talent from your team, allowing people to move over.
PAR1	Exactly. It's an opportunity for these guys. But I don't want to run in [Audit Analytics] because it associates my team with something that's very negative. People will not be as friendly as they [currently] are.
Eric	So today, Jimmy has his own dedicated team. It's about 4 or 5 people [analysts]. We [ORG4] are about to do the same for HR as well.
PAR1	I heard that.
Eric	I'm helping them design the operating model for next year. They also had that question, "Shouldn't it [Analytics] be enterprise [level], put it with PAR5 and all that …" I said, "No." One, ORG4 is not the best analytics team to begin with. And even if it were, PAR5's focus is revenue generation. You can't go to him and say, "Yes, I'm going to start something greenfield and

give me good talent." And you need good talent to start it up. So he'll [PAR5] probably give you the worse talent he has. And if I were him, I would do the same.

PAR1   We [ORG1] have a different approach. We actually gave them one of our best. And the reason we did that was because HR does the bonuses. (Laughs) So HR now feels they owe us a favour - "not only did you give us someone, but you gave us one of your best!" And so they remember that. "That's so corporate-minded of you." And so we put someone good in there and he now sits under HR and we kind-of look over their shoulders and mentor them. Yeah, they owe us a favour. Plus it's one of our guys there; one of our good guys. We've elevated his position. He'll tell us things that are also interesting to us.

Eric   You do need good people because it's so ambiguous in this [HR] space. You need the guy to think.

PAR1   But if you are good in analysis, it's an area you would love to get into. Because there's so much opportunity there. Being a HR Analytics expert … in 5 years, that's going to be worth a lot of money.

Eric   So that's it. Eric then thank PAR1 for this time.

Person	Transcription
Eric	Eric thanked PAR2 and explained the BI&A organisation design research.

Eric   Let's start off with your background and work experience …

PAR2   I came from [country of origin]. I joined banking back in 1996 in Singapore as a Marketing MIS analyst (management information system; business reporting). That was really the early days of analytics. It was pre-datawarehouse time, there was not even SAS; I remember I was using SPSS, and then using Foxpro. We do queries. Every month, we would receive a box of cassettes [tapes] from mainframe. I had one machine next to me that could read 10 cassettes at one time. So every month, the first step is to read in all these tables [from the cassettes] into Foxpro, and then use SPSS to generate some reports. Then slowly it started evolving ... and Datawarehouse come into play, SAS came into play, and the team expanded, campaign management tool came into play. That was my early years - I had spent about 5 years - 1996 to 2000. And then I went to do something else, because 2000 was the time of the internet hype, and I moved and went to do internet banking, but still in Singapore, where I spent about 3 years. And after that, I moved back into this area (2003), when the team has been given a very fancy name - it was called Business Intelligence.

Eric   Before that, what was it [the team] called?

PAR2   It was called Marketing MIS. You support Marketing to generate some reports.

PAR2   At that time, Marketing was basically a product management function. So I deal with mainly the product managers.

Eric   So you provide basic product information - like how the product is behaving, how customers are using the products, etc.

PAR2   Yes, month-on-month how it is performing, why there's a drop, why there's an increase.

PAR2   We reported into Marketing at that time. When I first joined [in 1996] Marketing MIS, it was a 2-person team. When I re-joined in 2003 [Business Intelligence], it was much bigger - 10 people.

Eric   But reporting still into Marketing?

PAR2   Initially it reported into Marketing, but later it reported into the Head of Consumer. So that status has been elevated. I did that [job] for about 2 years and then moved away to join the [line-of] business. So last year [2014] is the 3rd time I've come back to this [business intelligence work]. So altogether, I have about 8 years in this area [business intelligence]. And what drew me

back was that I saw a new wave of development in this area [business intelligence]. Big Data comes in, a lot of new things that the bank was launching, development of mobile, online platforms ... the bank has started to generate more data. And the processing power of the [computer] machines also greatly improved, storage cost has reduced. So all this allowed a lot of things to happen. I remember in the early years, even something like 'sorting the table' was nightmare; it took forever. So it's like before you go for lunch, you launch the sorting [program] and then come back to find out that 'memory overflowed' [sorting job terminated]. So now it's really different. The processing power is much more and storage cost almost like nothing; you can store as much as you want. And whatever [analytical] tools you want, it's available. Even ORG2 is considered behind, we still have all the tools, like [SAS] Enterprise Miner, and all sorts of BI tools. And so I thought [the job] was more interesting now.

Eric   When you joined ORG2 and came back into the Analytics side, did you see it as a more business [oriented] function - because you went to the business side (internet banking and such). And so you liked the business, and to come back now to doing business intelligence, do you see it as more business-focused?

PAR2   Actually, the answer is 'No'. Sadly. It could be because it's ORG2-specific, but I also see … we always have the dream to see the whole organisation become a data-driven organisation. But the reality is that, maybe because of the tools available - too complicated or whatever - people just don't want to change; they don't want to adapt. They will still require this unit [Business Intelligence] as a utility to extract data, interpret data, put it into a nice format (visualisation for example). So things haven't changed much. A lot of times, business has certain views for which they look for support.

Eric   They've already decided what they want and need data to support it?

PAR2   Yes. That's very common. But sometimes it happens the other way. I see it increasing - you [analyst] find something [in the data] and you go the business with it. But it's still rare, even though it's increasing. To me, I find that BI [business intelligence] and Analytics are 2 different things. You should be able to operationalise BI ...

Eric   Self-service?

PAR2   Yes, self-service. Given the right infrastructure with the right easy-to-use tools, BI should be part of everybody's job. And Analytics is something [different] - you may require more sophisticated thinking, more sophisticated tools to do it. And that should the function of the Business Intelligence unit.

Eric   BI for you is MIS?

PAR2   Yes. BI is for us to 'explain'. In the 3 organisations that I had worked for, it starts with the reports that Finance generates on a monthly basis; these reports cannot be 'challenged'. The Finance report may indicate that we are doing exceptionally well or exceptionally worse [in terms of financial performance] and the business will ask for a 'deep dive' on the numbers, but Finance would say that 'they cannot do it'. So they ask the Analytics team to

do it [to find the reasons for the exceptional performance]. So we [the Analytics team] try to use whatever data we have. First we validate the Finance numbers - that's the very first step, otherwise you [the analyst] has no credibility. But you don't have to do this every time. Once you establish the routine [of Financial validation] you can repeat it. Then you try to drill down [into the data] to understand why this [the exceptional performance] is so. Break down into the elements and see.

Eric   But given that you've created and automated these [data] tables, Finance should be able to do [the data drilling] for themselves?

PAR2   Yes. That's what I spent this last 1 year doing. Just got approval to put in some platform.

PAR2   It's not just Finance; Finance is of course part of my users. We are trying to push the Product Managers, Marketing Managers and Sales Team Leaders to use the platform for self-service. So that's basically the BI piece. Then I see that what the [Analytics] team can add value is 'Analysis'. But there will be ongoing challenge because the current team is [made up of] more programmers than business persons. They are very well-trained in SAS programming, and even beyond SAS like database and such.

Eric   Are they more computer scientists [type]?

PAR2   Computer scientists or statistical background. I now deal with 13 people. Half are Filipinos; as part of their university curriculum, they learn SAS; it's standard [for them] and very unique. But they are not business [oriented]; they are more comfortable dealing with data and the computer.

Eric   Even though they are statisticians with SAS skills?

PAR2   Yes. I can only do it step by step. First I have to push out all those non-value stuff to the end-users. Then I will push them [the analysts] to up-skill. Then you have more time for [business] engagement - understand more about the business. How do you generate insights. Now it's still very much - "Here's the report you want. Here's the excel spreadsheet you want. This is the PowerPoint you want."

Eric   These 13 people [in Analytics] support only Singapore?

PAR2   Yes, these people only support Singapore. There isn't a consistent structure in ORG2. To give you a little bit of background - have you met [xxx]?

Eric   No.

PAR2   There is a team called PARM. This is the Analytics function for the bank. They would do 3 things - regulatory reporting, risk scoring or scorecard development …

Eric   Doesn't that sit in Risk?

PAR2	Currently it's still being done by this team. And finally, they provide BI and Analytics support to certain product groups. And then they cover all the countries.

Eric   They [PARM] are a regional team?

PAR2   Yes, they are a regional team. My team [of 13 people] was part of their team before. But about 6-7 years ago, we were spun off. We were just to focus on Marketing Analytics, supporting Singapore only; supporting the Retail side of business (consumer, including cards). It doesn't follow the [prescribed] organisational structure. The business is organised as Personal Financial Services - which serves the mass market including privilege banking, and there's Private Banking. And ORG2 has something unique called 'Channels' - so the branches are separate. I support all these 3 parts - PFS [Personal Finance Service], Private Bank, and Channels.

Eric   But it's not necessarily Marketing [analytics] right?

PAR2   I report into Marketing. And when this team was initially spun off, it was supposed to just focus on campaigns - execution, leads generation. Over the years, the team has taken on more and more analysis [work], and so now, this team supports the whole liabilities part of the business (deposits, investments, insurance), credit card & unsecured lending (I have about 5 people supporting that), although credit card & unsecured lending is also still being supported by the PARM team.

Eric   What does PARM stand for?

PAR2   I don't quite know. Portfolio Assurance Reporting Management …?

Eric   Before the split 6-7 years ago, were the campaign leads supported by PARM? At the group level, they would do it [generate campaign leads] for the countries?

PAR2   No, they don't. Each country has their own [analytics] team that reports into PARM.

Eric   So you are saying that the country [analytics] team has always been there, but you [Singapore] now no longer report into PARM?

PAR2   Yes, correct. But in other countries, there is no such function called Marketing Analytics. The other countries only have PARM; in-country PARM.

Eric   So Singapore is the only country without an in-country PARM but has a Marketing Analytics team.

PAR2   Yes, that's correct.

PAR2   So what do we [Marketing Analytics] do then? Anything to do with data. Whether is extracting data, manipulating data, interpret data, it's us.

Eric   Is Data Governance with you too?

PAR2   No. Data Governance is something new to ORG2. In the past, there was no clear definition of a data governance group. GTO [Group Technology Office] in some sense performed this role. Because they developed the datamart, the datawarehouse. But recently, there was a separately established function called Data Management Office, reporting into the CFO. I don't know why [the reporting line] but everything has a reason - my interpretation is that the CFO and Finance team are facing a lot of issues with consolidating [data], with consistency [of data], for regulatory reporting and such. So they have the biggest pain, so they started this [Data Management Office]. They hired a Chief Data Officer, reporting to the CFO. This guy was from Commonwealth Bank of Australia; a foreigner. He just joined us for about 3 months.

Eric   And so, would the Chief Data Officer own the datawarehouse? Does it mean that all the data is now owned by Finance?

PAR2   The Chief Data Officer has 2 mandates. Firstly, there is this Data Governance / Data Quality piece - policies, enforcements. Secondly, he [Chief Data Officer] is tasked to revamp the whole data infrastructure. So right now, all the [technology] vendors are bidding for this opportunity as it is big.

Eric   So BI&A is only a consumer (including private banking) function? So institutional banking, investment bank and such will not have such a function?

PAR2   I don't think so. But PARM covers a bit of Business (SME) Banking. But that's it. It does not cover Corporate Banking. I guess it's because the nature of the business is very different. Also the number of clients [in institutional banking] is very small, and they can afford to manage it with a relationship manager model. The value of BI&A is less to them. Whereas in Consumer, we have 1-2 million customers; without BI&A, you can't even ...

Eric   That makes sense. Ok, so do you participate in senior management meetings. We define senior management meeting here as the Head of Singapore Consumer and his one-downs.

PAR2   Yes, we are part of the meeting. And if I have a choice, reporting into the Head of [Singapore] Consumer would be more appropriate. Because a lot of times, it's not just about Marketing … oh I missed out one thing …

PAR2   Rightly or wrongly, Analytics is viewed as a 'silver bullet' - for any problem with no obvious answer, they say, "let's do some analysis." So for example, we want to grow our Checking & Savings accounts …

Eric   How to get more float money and lower the cost of funds?

PAR2   Yes. Especially in the local bank, we have a huge passbook portfolio. It's low balance although overall it's big; average ticket size is small and the servicing cost is very high. The passbook is very fragile and you have to do replacement. It makes up a huge chunk of the branch transactions - they go to the branch to update their passbook ...

Eric	But they can update at the ATM?
PAR2	Because of the design, the paper passbook spoils easily, so the [ATM] machine can't read it. So they go to the branch. "But what is the strategy? What should we do with passbook? Hey Analytics, can you think of some ideas?" So we did some traditional analysis, looking at the profile of the customers - they are generally older, less educated. Then the question came back - "The older people should already have their passbook. Why do I see so many new passbooks every month?" Actually the problem is simple - because we don't sunset the passbook option - it's still an available option. So we sent people to the branch [to observe], because it's not always obvious from the data. Then we discovered that a very high proportion of [new] passbook customers are foreign workers - maids, construction workers. Partly because they don't have a fixed address to receive the [banking] statements, and they want to have the 'freedom', because they are not so internet-savvy, to have access to my updated balance. And they can put it inside their pocket, under their pillow. Anytime they want to see it [the passbook], they can take it out. But I have no solution when I found out this was the problem. It still came back to whether the business wanted to continue servicing this segment, and this is the outcome. And this is linked heavily to the NETS transactions. A lot of transactions have moved to credit or debit cards. Customers are moving because they get [reward] points. But NETS market transaction is still growing. But we couldn't figure out why. The other big chunk of NETS transactions traditionally came from AXS stations. AXS transactions were dropping because it's much easier to pay online. So we went to talk to NETS. We were like internal consultants. Actually the data doesn't tell you anything. We see the spending pattern dropping, but we still see the overall growth. So we went to NETS but they don't share [their data and insights]. But they hinted to us - "Remittance". Remittance transaction was using NETS. Foreigners. So when they go to Lucky Plaza, they use NETS to do remittance - debit from NETS and transfer to MoneyGram or such. So that piece is very big.
Eric	Because the money remitters accept NETS rather than debit cards?
PAR2	Yes, they accept NETS.
Eric	But wouldn't you have been able to see this from your transaction data based on the classification codes?
PAR2	That's ORG2 issue. The data [in the datawarehouse] is really not enough. Critical information is missing. And that's why with the Chief Data Officer coming in, one of the 2 mandates was to fill up this gap. I can tell [from the data] that there is an ATM transaction, but I cannot tell where.
Eric	But you have an ATM ID …
PAR2	But the piece of data is not readily available. It's not in the datawarehouse. Of course it's there somewhere in the source system. So there's a big gap actually. This has limited the capability and analysis that this team can produce.

Eric	We come back to the CASA / passbook problem. This is what we would typically call an ambiguous problem. They [the business] is asking you to solve the cost problem of passbook. They don't know what's causing it and we don't know what to do with it; even as a recommendation. And they give Analytics [team] the full say to like "you are a McKinsey or Accenture; you study and tell me why and what I should do." And then as you do this analysis, you discover that there is critical data missing; say like the ATM ID. The fact that it's been missing for so long and the gap has never been closed, I can only imagine that maybe it's because no one has ever asked this question. It was never a critical issue to close this gap. Because if someone had said I need a report to know where all the ATM transactions are happening, then the gap in the datawarehouse would have been addressed way earlier. So since people have not asked it, is it because the questions in the past tend to be around requesting for standard reports. And what you are seeing now is something that is more strategic-type questions. And so data hasn't caught up with that.
PAR2	It's more the latter. As you said, now the questions they ask is much more sophisticated than before. And there's a lot of new people coming in [to ORG2]. Like you met [ORG2 country head of consumer banking] the last time. Actually, a lot of these questions are from him. "Why like that? Can you take a look at it?" In the past, whatever the team was producing was sufficient. But now, it's no longer sufficient. And a lot of new people joined in the deposit side, in the investment side, even the credit card side – [country head of credit cards] joined.
Eric	And they were used to getting information?
PAR2	Yes, and so when [country head of credit cards] came in, she asked if there was a [BI] cube for users to run their own queries. We really didn't have. We have some cubes but we don't have end-user tools to access it besides Excel. And Excel has a lot of limitations. So new people come in and they identified new gaps. And that's why I consolidated this whole thing - saying, there's a data gap we need to close, there is also a tools gap that we need to close - if you have data, you must allow users to access. And so this is happening now. But in the past, whatever thing was sufficient.
Eric	Assuming there was no critical data gap … let's take this same example of NETS and passbook … do you find that you current team of 13 people have the ability to act as consultants?
PAR2	No. So that's what I told you [earlier]. They very much fit into the current model; they are competent for the current [engagement] model - I generated regular reports, I extract these campaign leads, and that's it. But if you want them now to become like consultants ... there are 2 things. First thing - they are really lacking an understanding of business ...
Eric	Why is that? Many of them, I'm assuming, have worked here for a fair amount of time.
PAR2	But they've always been seated centrally. When I came in, I made some changes - I sat 5 people with [country head of credit cards] [the credit card

head] and the credit card team. That was the first time. Prior to that, they were all seating here, while the credit card team sits in Toa Payoh.

Eric   Oh! The credit card team is not even in this building?

PAR2   Yes, they are not in this building. I'm now currently seating on 38F, but the main part of the retail business sits on the 13F; so they are also not in the "same" place. So there are not enough interactions. The interaction happens very much within the [Analytics] team itself. So I've been trying to push them to interact with the business but because of the historic work [engagement], they are pretty bogged down and don't have much time. They are just coping with the current volume of work. So I said that we should push some of the job out [to IT] so that we have a bit of breathing space.

Eric   Why not just hire more people?

PAR2   Here, people don't believe … they feel that I already have a very big team. But actually, it's not true.

Eric   They [the business] is prepared to change the whole infrastructure and spend millions of dollars, but they cannot give a few more people?

PAR2   I managed to convince them … the later part of the year. I was supposed to be given 4 more people. But before I can have them in, the market situation changed. The bank has now entered into a [headcount] freeze. Nobody can hire.

Eric   Across ORG2?

PAR2   Yes, across ORG2. But the general sense is that they [management] believe that the team is big enough. But actually it's not. Actually it's very small. So when this new CDO came in, I was quite happy that he understands. He says, "Just campaign alone, I have 40 over people back in Australia." Of course you can say that Commonwealth bank is a bigger bank but in terms of ... geographical scale doesn't really make much difference for this kind of [Analytics] function. So he understands. I was quite happy; now I have a supporter.

Eric   How many years have this ORG2 [Analytics] team been implemented? It spun out in the last 6-7 years.

PAR2   Yes, 6-7 years.

Eric   But it's just the [change in] reporting line. The job, even when it was under PARM, would have been similar?

PAR2   Yes. I don't know how it's been since this [Analytics] team was [first set up]. What I know is that the current data infrastructure has been in place for around 10 years.

Eric   Datawarehouse, data models?

PAR2   Yes, datawarehouse, data models. Enterprise datawarehouse. This 'thing' has been 10 years already.

Eric   A Teradata datawarehouse?

PAR2   No, IBM. DB2.

Eric   Oh, 10 years already. So the [Analytics] team must be around 10 years as well.

PAR2   Yes. Normally, the [Analytics] team must exist before the datawarehouse.

Eric   At least 2-3 years prior to that?

PAR2   Correct. I believe 10 years ago, ORG1 [competitor bank] had already moved into Teradata.

Eric   Can you clarify which line of business you support?

PAR2   We mainly support retail [banking].

Eric   In terms of the way you organise you BI&A team, do you split campaign and MIS support?

PAR2   Currently, the team is organised around the line-of-businesses [we support]. Cards team - 5 people. Everything to do with Cards. From reporting, campaign, etc.

Eric   What if the campaign cuts across [the lines-of-business]?

PAR2   Actually, there aren't such many campaigns that cut across. The bank's operating model is still very much [silo-ed]. If I tell you, you will laugh - Credit Card has their own contact policy, Deposit has their own contact policy, Internet Banking/Channel has their own contact policy! I said, "This is not right, but I am not going to rock the boat. Slowly we have to change." So that's how it's organised. Credit Card/Unsecured Lending is one team. Deposit/Investment/Insurance with a bit of Secured Lending is one team. Secured Lending is actually very small - Mortgage and Auto [Loans].

Eric   But Mortgage for ORG2 is big, isn't it?

PAR2   It's big. But Mortgage is mainly supported by PARM. But the campaign leads [for Mortgage] is generated from my team. But anyways, both team work very closely.

PAR2   And then, there is one person supporting Channels.

Eric   So Channel would include ATM, Branch, Internet?

PAR2   Correct.

Eric   Only 1 person?

PAR2　　　Yes, but recently I brought in one more person. Because ORG2 started the 'Segment' concept, which cuts across. Actually, this is the area I want to expand tremendously. The additional headcounts were actually given for this area. But I was not fast enough and now [the headcount] has been frozen. But this is the team I want to grow - Segment.

PAR2　　　Then I have 1 person specialising in the data infrastructure. Platforms, automation. He was from SAS. Basically, he's a system guy. So he makes sure the daily job runs, system 'clean-up' and maintenance that is required for the reporting and campaigns.

Eric　　　Are you using Unica for your Campaigns?

PAR2　　　We have Unica but it's not used.

Eric　　　Using Base SAS [for campaigns]?

PAR2　　　Yes, using Base SAS. That is another piece I am trying to change. We are in the process to upgrade Unica, because it was not set up right [originally].

Eric　　　So, all these years, you are not able to use Unica but you still pay for the license?

PAR2　　　Yes, every year the maintenance [license]. It's actually end of life - the version. And so I said, "If we are not using, we are not going to pay." Then I got to know a little bit more [about Unica]; there's still value. If you want to automate … SAS may be powerful but it's not really designed for this [campaign automation]. I manage to get approval to upgrade Unica, and include a few more modules. Unica is still good, but in the hands of IBM, it has become really questionable. Because they [IBM] acquired [Unica]. For IBM, it's not their focus; they've got too many things. In every meeting, an entire 'army' would come; there is no one single person [from IBM] who can give a clear answer. I believe they've lost a lot of people.

Eric　　　They have. Not many from the original Unica team is left.

PAR2　　　Yes. IBM itself has gone through [a lot of changes] … a lot of people have left. So the tool [Unica] is still a good tool, and because ORG2 has already invested in it, we decided to go for an upgrade.

Eric　　　But ultimately, today you are most dependent on SAS skills [within the Analytics team]? Almost everything in your infrastructure is running on SAS?

PAR2　　　Yes, correct.

Eric　　　And that's why you have the Filipinos who are naturally trained in SAS.

PAR2　　　Correct, correct. Exactly. Yes. That's basically the only tool [SAS] that this team use.

Eric　　　No SQL, no R?

PAR2   No. It's everything on SAS. So in terms of responsibilities, as I said, the team is divided into 4 parts, by verticals.

Eric   But within those verticals, let's say the Cards team under [country head of credit cards]. For the 4-5 people supporting that team, do you have dedicated resource for campaigns and reports? How do you decide who gets to attend meeting with the business?

PAR2   When I first came in, everybody does everything. All generalists.

Eric   Is there some kind of job tracking that allows the jobs to be distributed and assigned?

PAR2   Within Credit Cards, there could be sub-teams. One analyst may be focusing on Merchant. So anything to do with Merchant, whether it's reporting or campaigns, he will do it. Then there's one focusing on Portfolio. And Acquisition and so forth. And so … actually I don't believe in this kind of set-up/model; I think it's not effective. There's a lot of wastage.

Eric   Because you've seen it in your past [experience]?

PAR2   Correct. And so I said that we would eventually go into a specialist kind of model. So you have campaign specialists, you have analysis specialists, you will data infrastructure & MIS specialists, etc. But I know that Rome is not built in one day. So now, for example, the 5 persons in Credit Card team - there's a team head, 2 (I call them) decision analysts ... minimum involvement in campaigns, and the other 2 are campaign analysts - all the campaigns are handled by these 2 persons ... and reports. Things like predictive modelling, the 2 decision analysts will handle, including all those in-depth studies, like recently ... this is all confidential ... we were pitching to [xxx] for the co-brand card ... all these kinds of things, the decision analysts will handle.

Eric   And so, they [decision analysts] are the ones who will attend all the meetings with [country head of credit cards] and the [credit card] business?

PAR2   It depends on the project. If it's relevant to them [decision or campaign analysts], they get to attend. Attending meetings is not really an issue. Generally it's open. It's up to us to decide who goes to the meeting. Is that the angle you are getting at? Why do you keep asking me about 'meetings'?

Eric   Because I'm trying to understand how the analysts learn about the business. For example, is there a pecking order which says that if you are more MIS or campaign-oriented, then you are more of a utility, you don't really need to attend meetings [with the business] ... because you don't need to discuss, you just have to take the job and do it. Whereas if the person is a decision analyst, then he needs to be closer to the business and therefore, the person must attend all [business] meetings to represent. Like a relationship manager [for the Analytics function].

PAR2   There are formal meetings in which we decide who should attend … Marketing Analytics is always invited whenever [country head of credit

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cards] has a meeting. And then for [country head of credit cards]'s one-downs … the [credit card] business is divided into 2 main sides - the acquiring side and the issuing side ... for both sides, we get invited. Since they are all seating together in the same office, there is a lot more interaction directly, not through formal meeting arrangements. The team [Analytics] has been 'harassed' every now and then ... to a certain extent, they are saying, "Please don't disturb us!" Because in the past, they [Analytics] were seating very far [from the credit card business], they had quiet time to do their work. Now, there are so many people on the same floor ... if everybody goes to the table [of the Analytics] once a week ... they would be fully occupied. So I think in terms of engagement, it's not an issue.

Eric   But is there a feeling, when you push for this specialisation (which will come), that … one team feels like first-class citizen and the other like second-class citizen?

PAR2   Definitely. Everybody wants to be a decision analyst. Actually I also want to get you inputs on this! There will be this view [of 1st vs 2nd class citizen]. They have raised this concern. There is a preference … when I shared with them [the organisation model to come]. I ask them what is their 3-5 year plan ... and they all want to be decision analysts. Nobody wants to do campaigns. So when the time comes, I need to find the opportunity to tell them, "You are fit for this, you are not fit for that."

Eric   And you worry there will be attrition?

PAR2   Definitely. For these kinds of transition, definitely there will be attrition. But it's inevitable. So I'm thinking what is the best way. Maybe some kind of rotation will work for them? Everybody has to do 1 year or 18 months [in a role] and then you rotate. I'm viewing these things [campaigns activities] as more operational. You have some questions on offshoring, right? Well these kinds of operational things can be offshored.

Eric   There is no offshoring today?

PAR2   No. ORG2 doesn't really believe in offshoring. But now they are in the process of centralising everything back to Singapore.

Eric   Singapore becomes the offshore to the other countries …

PAR2   Yes! Correct! That is exactly it! Because it's very hard for PARM, sitting in Singapore, to manage what is happening in country. There is people attrition and you need to re-hire, etc.; it's very hard. If it can all be centralised here, because data is already all here [in Singapore] ....

Eric   Oh! You're core banking system and datawarehouse is in Singapore?

PAR2   Yes, in Singapore. And so you just need to work out the segregation [of duties] for the analysts … which countries' data they can or cannot touch.

Eric   Maybe we digress a little bit. So, treat Singapore as the offshore. And imagine if I were Malaysia ORG2. Have they raised concerns that, "If I offshore, I don't have my own Marketing Analytics or PARM team; I cannot

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do the [business] work in Malaysia!" Or is the Malaysia ORG2 head saying, "I agree with you. If you offshore into Singapore, I will be able to get the best of both worlds."

PAR2   They do have such concerns. Since they haven't seen how this model will work for them. So there's always a reservation; they want to keep something for themselves. Not just Malaysia. There's another piece on my plate that I'm now looking at - every product team will have somebody doing some kind of reporting ...

Eric   Not all reporting is in your team?

PAR2   No, because the infrastructure in ORG2 is really bad. So there's a lot of manual reporting. You need to receive email from somebody, go the system to download something and then you have to piece them together.

Eric   So the people in the line-of-business have access to systems? To you datawarehouse?

PAR2   Yes to the system but not to the datawarehouse.

Eric   They take from the mainframe some secondary files that are not available in the datawarehouse? And they've designed some process for themselves to do all that?

PAR2   Yes, exactly. It's not in the datawarehouse. Some is in the source system and not in the datawarehouse. Some information, especially those related to sales, is not even in the source system. Collect manually from the branch. They piece all this together and they generate daily reports from them. Report 'traffic lights', run-rates, for weekly reviews. So I was told that it seems that there are so many people with duplicate activities, so much 'wastage'; we should put them together. Put them under me.

Eric   So if you had to count the total BI&A-type of people in the bank, there will actually be a lot of them?

PAR2   I've asked HR to pull out. I'm given to understand that there are another 20-30 people [not in the Analytics function].

Eric   Double the size of your team.

PAR2   Yes. For each department, they will have somebody doing this kind of things.

PAR2   So coming back to the topic. Everybody wants to have their own [team].

Eric   So even within Singapore, the product team is also reluctant to give up their people [to consolidate into Analytics]?

PAR2   Yes, unless we can guarantee … but our new model is not proven. The current model [own department analytics people] is at least working, even though it may be inefficient. "It gives me whatever I want." So I'm telling [country head of consumer banking]to say, "Let me work on the capability

[of the Analytics team] first. Then we bring them [those in the other departments] in. Then we can offer an alternative. Now, even if you bring them all into me, I also can't do anything with it."

Eric   You will keep to BAU [business as usual]?

PAR2   Yah, exactly. Because I don't have an alternative. So if I can bridge the data gap in the datawarehouse, then I can automate, I can offer self-service tools. Then it's a different story. Now, even if you consolidate into me, so what?

Eric   The work doesn't change and there is no efficiency to be gained …

PAR2   Yes! And the risk [of things going wrong] is very high. You are accountable. Then you may drop the ball. There is nothing to gain.

Eric   It just looks like it's centralised on paper …

PAR2   Exactly.

Eric   In the Channels function, let's say Branch. Is the [Analytics on] sales incentive and sales promotion supported out of you team?

PAR2   Not really. I keep saying that ORG2 is really lagging behind. Within the overall Sales & Distribution (this is like the armed forces of the bank), it's not even centralised. You have someone managing Privileged Banking - he will have somebody …

Eric   Even though you are in the same physical branch?

PAR2   No, I'm not talking about Branch. You see, the structure is you have overall Sales & Distribution. Underneath that you Mass Market - Personal Banking sales force … Wealth Management sales force … in ORG3, you call Wealth Banking as IPB [International Personal Banking] ...

Eric   Citigold … Priority Banking ….

PAR2   Yes, and then Privileged Banking. Privileged is more like Citigold. So even for these [in ORG2], the [performance] scorecard is not centrally managed. Privileged Banking sales head has his own scorecard … but now there's a new Sales & Distribution head ... he's trying to centralise. Now he put in place a central team to bring all the performance management together.

Eric   But performance management does not sit with you?

PAR2   No. But that is one areas, once we've sorted out the mess, that I want to venture into - Performance Analytics. There's a lot of data. There's the human element - who's doing what, participation, concentration, who are the consistent performers … a lot of things can be done. But now it's very rudimentarily done ... the performance management team level. We give them some [data] download every month - customer portfolio, key data - so they can play around for themselves.

Eric	Let's jump to question 8 regarding the background [of the team]. Let me ask the question differently. You mention that you team has SAS programming skills and you wish they could be more consultative to the business. But when you offer them this option to be a decision analyst or a campaign analyst, everyone says I want to be a decision analyst. Is it because the name [title of the role] sounds nice? There's a sense of 1st vs 2nd class citizen ... but do they understand that [to be a decision analyst], they need to have the skills to solve business problems, present, talk, engage ... and they are prepared to do that?
PAR2	Ok, the short answer is 'No'.
Eric	But they want the title [of decision analyst]?
PAR2	It may not be that they want the title. Rather, they don't want the campaign. They've been doing this [for so long] … they are just sick of it. But the team is pretty stable. That's one thing good about hiring Filipinos - they are quite loyal. But if given the choice, they all don't want to do campaigns. Because they've been doing this [so long] ... it's a lot [of campaigns]. We do [campaign lead] extraction - 300 to 400 a month!
Eric	Sounds about right. For a bank the size of ORG2.
PAR2	But it's all manual. And then you need to check the contact policy, check this, check that … just thinking about it gives me a headache!
Eric	Do things go wrong often?
PAR2	No, it's not that often.
Eric	So, there's some of [structured] process already in place?
PAR2	Yes, correct. So that's the thing - my approach is that I will work with them on selective projects - a kind of consultant project - I will work with them individually … let them try. Then get them to prepare the presentation, see how good they are.
Eric	Even if they fail, it's ok? It's part of the learning?
PAR2	Yes, it's part of the learning. So I will guide them from the back. If I see that things are about to fail, I won't let it happen. I will chip in to help. So slowly I'm trying to help them understand their strengths; what they are fit for. Whether they are ready to be a decision analyst. Being a consultant sounds very nice but not everybody can do that.
Eric	Do they [the analysts in your team] have different [performance] scorecards? Appraisal process scorecards. How do they know that in the past they didn't have these skills? Was it expected of them? Was the scorecard created so that they are changing their behaviours to meet it?
PAR2	We really need to change this part also. In the past, the [performance] scorecard was talking about how many reports generated, how many campaigns we have supported … with no mistakes. So this year, while they

can continue doing this stuff, I wanted them to tell me in the appraisal what were the new things they had learnt, what are the new things they've tried. They cannot just be repeating the same thing. I'm trying to gauge whether they can learn. If they can, then there's a way to move forward. But the scorecards are generally all the same.

Eric   They don't have campaign ROI in the scorecards? For example, they have to improve the ROI on the campaigns? Certain level of P&L targets?

PAR2   Ok, the campaign ROI is generally very bad. The campaigns are not tracked 100%. Because there are too many and they don't have time. They just keeping firing out [the campaigns].

Eric   But who designed these campaigns? The business tells them [the campaign analysts] …

PAR2   The business tells them. In the past, they just 'do'. And this year, I got them to ask questions. To ask "Why?". "Why do you want to do this campaign? What was done in the past?". I see the changes but … ok, the short answer to your question is that there's no ROI measurement. But we do measure [campaign] response rates. But not ROI. But when the [campaign] automation happens, ROI tracking will be part of it. So that's why we are incorporating the new modules of Unica; it can do that. And 'marketing operations' - the flow, the cost, etc. All this can be tracked. And list optimisation - whatever you contact policy, it can be handled [in Unica]. I'm not criticising anybody, but let's put this in place; we cannot continue as it is now. What a one year [since I joined ORG2]!!

Eric   Let's talk about the kinds or variety of business problems that you BI&A team handles. Prior to you joining, it's more likely MIS and campaigns. And even for these campaigns and MIS, they are pre-scoped and determined by the business - "these are the [campaign] criteria; I need the report to look like that; I need the campaign to look like this, please go and extract and code and get for me. Don't argue; no questions asked." And since you've joined, there's probably more discussions. They [the business] comes to you and say, "How should I target these customers?" rather than "Just do this."

PAR2   Yes. There's an improvement in the interaction [with the business]. One simple thing I asked my team to do - when certain [MIS] requests are raised to find out certain things - they must ask, "What are you going to do with that [the output] once I've told you?" "So what are you going to do?" So this has significantly changed the culture; it was not part of the culture before. So now they ask questions. 40-50% of the time, they ask these questions, and it silences them [the business].

Eric   Because they [the business] also don't have an answer?

PAR2   Yah. They [the business] go back in silence, and then they come back again with the same request. And then we ask the same question again. They must be able to articulate!

Eric   If the business is unable to tell you, would you analysts be able to suggest?

PAR2   We will try to suggest. You must understand what you are going after. Sometimes, the things they ask is because the boss is asking, and they are just the messenger. We want to know the context, so that we can offer them better value. Rather than I give them 'this' and they say "This is not exactly what I'm after, can you give me another one?" So there's a lot of back-and-forth.

Eric   So I've introduced to you the concept of ambiguous vs uncertain types of problems. So most of the questions from the business, I presume, are the uncertain types - "I need more data to answer this question."

PAR2   Yes.

Eric   Do they [the business] ask you to do modelling work? To optimise?

PAR2   They do. Remember the last time we were supposed to seek you help [private consulting engagement] but it didn't materialise … we do. What I see is that the modelling … we attempted a few … for example, 'Revolving' - on the credit card side, that's one of the key things we tried ... on 'Revolving' - which merchant spend and such that lead to revolving behaviour. And then on the Deposits side, we tried looking at attrition - because of the competition in the market, we looked at attrition. Especially our famous ORG2 high-yield accounts ... it's something similar to Standard Chartered's e-saver account ...

Eric   Like a money-market account?

PAR2   Yes, correct. It's volatile. So, the team knows the modelling technique, but something fundamental is missing. A lot of time, it's the business knowledge or commons sense that's required. I give you an example. In one of the modelling attempts on attrition, one variable came out very strongly - AUM [asset under management]. All the rest [of the variables] were just 'noise'. In the meeting when they showed it to me, I also didn't figure it out. But after when I went home ... it kept bothering me ... it cannot be, there's no such thing actually ... the lift is just coming from one variable ... it's not possible. And so I went back and asked them how they defined 'attrition'. They had defined it as the AUM balance must have declined by at least $100,000. So I asked if they excluded those with less than $100,000? You must qualify the base. And oh, they forgot [to remove that group]. So you see, they can use all these techniques like logistic regression, linear regression, but ...

PAR2   And recently, there was another one … it was also the same thing. I couldn't figure out what was going wrong but the model was just too good - the lift was just too good. I said, "Something must be wrong. Go back and re-work. It's just too good. Cannot be. No such thing." When you look at it you know ... So, that's the kind of situation. Everybody wants to be a decision analyst but they cannot do these kinds of things.

Eric   So that's in the uncertain space. Even with the modelling [work], they may have the technique … even if you frame the problem for them - e.g. the problem statement is to predict attrition. As you say, you can predict it in many ways - drop in balance, look at hard vs soft vs pre-attrition. In some

sense, that's a bit ambiguous. The minute it gets into that space where it's subjective, they tend to struggle.

PAR2 Yes.

Eric And so now, if I go to them and say, for the 'Passbook' problem - give me a strategy for exiting the passbook market, they can't do it.

PAR2 No, I don't think they can do it. Cannot. No way.

Eric And you are hoping that if you put them and sit them with the business, that they would be able to get these [needed] skills?

PAR2 More interaction will help.

Eric Why?

PAR2 More interactions mean you get to be exposed to more [of the business]. You understand more … you talk to them more … sometimes you receive an email request, but the email may not exactly convey the true objective. You need to go back and ask questions. More interactions allow for a building of relationship; then we will be more open; we can talk. Trust-building. One of the problems here in ORG2 is that we don't share information. A lot of the business strategy presentation decks are not shared.

Eric But you said you were part of the senior management meetings …

PAR2 Now. We are in the meetings now. When I first came [to ORG2] and was in the meeting, when I asked for the deck, it's not given. I said I wanted to deck to bring it back to share with the team, they said it was highly confidential. So I asked them how they expected me to support them. Now slowly they are beginning to share the decks so long as we maintain confidentiality. So it's still not natural [for the business] to trust. So, trust is one thing. Exposure to business is another thing. What else can I think about ... I can't think of anything else.

Eric Ok. I'm trying to link it back to the point - you would like to have a team of consultants.

PAR2 Yes.

Eric When you get you [technology] investment in you campaign and MIS side, that becomes automated and self-serviced. That removes you dependency on people [within you team].

PAR2 Yes.

Eric And therefore over time, you can hire people of a different skillset.

PAR2 Yes.

Eric And to build this skillset, you believe that embedding the analysts in the business will help in the development of the 'consultative marketing analyst'.

PAR2   Yes. So there is a trust element. And also, just by co-locating together, it naturally increases interaction. It helps with the trust-building. They may overhear what the business talks about. So learning is much faster. Actually one of the things I observed when I came in - they were all having desktops. Not laptops.

Eric   So they cannot go to meetings and share?

PAR2   Yes, correct. That was a big battle to fight also - just to get laptops [for the team]. Not fully completed yet. Part of the team has laptops.

Eric   The business all get laptops?

PAR2   Yes, the business all get laptops. I found it strange that the Analytics team didn't have laptops and when I asked why, they said it was due to [information] security reasons. "You may take the laptop home!"

Eric   And so can the business!

PAR2   Yah! Exactly! So I won the battle and now we are in the process of getting laptops for everyone. That means they don't have to be bogged down at their desks. They can go anywhere and talk to the business, to share.

Eric   That's a very valid point. The information has become portable. Today, it is not. In the past, the only way they could share information was through emails or formal presentations, or people come to you. You cannot sit and have an interactive-type of discussion.

PAR2   Correct, correct, correct. Nowadays, ORG2 is improving. That's an initiative from the IT side - they equip all the offices with Wi-Fi. So you can carry you laptop anywhere. So things are getting better.

Eric   Do you have a set of procedures. For example, if I asked you a question to solve a business problem - is there an SOP [standard operating procedure] for you Analytics team to follow - e.g. I always need to start by getting the data, frame the problem, to ask the questions ...

PAR2   I don't think there's anything written. But we have some do's and don't's. From the seniors passed down to the juniors that everyone tries to follow. So firstly, you must think through the full business cycle - acquisition, utilisation, retention - the customer life-cycle. Any problem you have, you must think through this way. Because ultimately, we have to deliver a business solution. And then, to support this, you must have clear understanding of what exactly the business is asking for, what is the problem statement, what is the context.

Eric   Do they write this down; document it?

PAR2   No. We do have a request form. Business will write down what they want [on the form].

Eric   But they don't always tell you 'why' I want.

PAR2   Yes, they don't. The 'why' is why I asked to team to get clarification [from the business].

Eric   Why not just change the form to include the 'why'?

PAR2   I'm going to leverage on Unica's marketing automation process - there's a form there. The workflow process. I'm going to leverage on that to change the piece. So you can put in a check-list. Why I like that is because it's systematised - I can reject if you don't fulfil the criteria. I can put certain thresholds. Now [without Unica], anything will do. Today, you cannot say 'No'. So, clarify the question, then frame the approach. What are the possible hypotheses, look for data, and then you prove or disprove you hypotheses. This this kind of flow is there but it's not put down into a proper SOP. No. Campaign side is more stringent. The list extraction. Criteria has to be clear. You have to check every step before you go on to the next. That's more stringent. But for analysis, it's not so stringent. Currently, 80% of the time is on campaigns.

Eric   But it has definitely been lesser than in the past? In the past, it was closer to 100%?

PAR2   Yes, closer to 100%. So I said that I wanted to bring it down to half-half.

Eric   Half-half is about right.

PAR2   Hopefully by end of next year. Because by the middle of next year, all these platforms will be in place. And we can start to transit into the new model.

Eric   Describe you measure of success. So today you wish you team could do more analysis work. But how does the business evaluate you? How are you internally evaluated to say that you are successful as a function?

PAR2   I guess now, it's more about whether you can deliver on time. Timeliness is very important. A lot of things in the pipeline; just keeps increasing, leadings to delays. So, focusing on the priorities and what is important. So the 2 team leaders - on the credit card side and on the deposit side - a fair amount of their time is to review these requests, to see which can be combined, which one can be de-prioritised, to make sure the important things don't get delayed.

Eric   But these requests are generally campaign or MIS related? Even adhoc MIS - they just need some number for a quick analysis?

PAR2   Correct, correct. So "How often do you get criticised for incorrect intelligence?" Well this one is ongoing. It's not so much that the data is wrong or inaccurate. But it depends on the scope and definition, whether certain things are included or excluded in the data definition. There is also the data refresh timing. So you will see some discrepancies. But so far, there is no major incident, where they say that you've produced something that is 'wrong'. Touch wood! Even though we have these kinds of process, so far I don't remember any incident where it's been outright 'wrong'. But I also think it's too good to be true. How is it that we run manual processes and yet the

house hasn't collapsed? Occasionally there are customer complaints - why I receive this, why I don't receive that. But so far when we go into the system to check, we are able to defend ourselves - the business asks for it. Most of the time it is because of the time lag - most of the data here is monthly refresh. And monthly refresh takes 2 weeks. For example, only now would I be getting last month's data. And then by the time it can be executed, 1 month has already passed.

Eric   In ORG3, next day I'm up.

PAR2   We have some selected things that run daily - but daily is also 2 days later. So this whole infrastructure is … so Day 1 you can only extract, Day 2 you load, when we get it, it's Day 3. So I say, "What is the point? The deposit outflow report …" Maybe you interviewed the wrong organisation!

Eric   No, it's a good contrast.

PAR2   You can't imagine, right?

Eric   But there's lots of room for improvement. You can only get better. It requires time and resources. But as a construct, it's not difficult to fix.

PAR2   So [country head of consumer banking] asked me a few week ago, "How do you feel?" I said, "I feel I'm happier because I have a sense that I'm making a difference every day."

Eric   You're not maintaining … you're building something.

PAR2   Yes.

Eric   Do you get criticised for irrelevant intelligence?

PAR2   Irrelevance is sometimes self-initiated. You go and study certain things and come out with something …

Eric   If they [the business] ask, it's not irrelevant?

PAR2   Yes, I would take it that way.

Eric   Ok, so let's say the business ask about 'Passbook'. The reason why I say it may be irrelevant - they may say to you in a way, "Help me to understand what people are doing with passbook," but actually what they are thinking in their minds may be a different problem they are trying to solve. But in the way it's articulated, and the way the analyst look at it, they may go, "Oh, you want me to find a way to reduce passbooks." But actually, the business is asking you, "How can I get more value from this segment." So when you do the work and it goes back [to the business], they say, "This is not what I ask for. You misunderstood my question." We see that often. ORG4 [competitor bank] has a long-term partnership with A-Star [government research institute], and they use the A-Star guys to solve big data challenges. And in the early engagement, this [irrelevance] was an issue. The business briefs them [A-Star] ... they sit there and brief them, and then the A-Star guys go back, and then they come back with a model. It was completely not what the

business had asked for. And the business said, "That's not what I told you." So what they [A-Star] hear and what they [the business] say can be very different things. They understood the problem differently.

PAR2   So far, I haven't really come across that. Whatever we've produced, nobody has told us it's irrelevant. They will always say, "This is good. But can you find out more."

Eric   Even for those that you self-initiate - they will say it's not bad?

PAR2   Actually we don't really self-initiate, because the pipeline [of work] is just too much already. And as I say, a lot of the time, they view analytics as a 'silver bullet'. A lot of times when they come to Analytics, it's very challenging, very tough problems that are not easy to solve.

Eric   That's how you feel as well? By the time it come to you, you are the last resort.

PAR2   Yes. Sometimes I tell them upfront that I don't think Analysis is the solution.

Eric   But if you say they treat you as the last resort, isn't that a good thing?

PAR2   It's a good thing. They look very highly on analytics. But it also means they don't really understand. What are the constraints; what exactly is analytics for. Recently we were asked to predict price elasticity - customers who are rate sensitive, customers who are rate insensitive. I know there are some attempts in the past ... I remember the consultants Noventus or whatever ... they do all these kinds of specialised price frontier analysis. But I say there just isn't enough data in the bank to allow us to do something meaningful ...

Eric   But you can create tests?

PAR2   But then we need to start doing the test. We need to isolate the environment. So it will not be <snap of the finger> … ok, I can give you something next month. Right? But people don't understand. "Why? You should be able to, right?" So, they see the value of analysis, yet on the other hand, you can tell they don't really understand how to use it in the best way.

Eric   Maybe we digress a little bit. But who's fault is that? Is it the role of the BI&A head or the business to educate?

PAR2   I think it's business. We can facilitate, but has to be the business. I see the changes when [country head of consumer banking] came in. And that's why he's always asking … he will tell the business team, "When I say 'analysis', it doesn't mean you have to go to Marketing Analytics. Everybody should be able to do your own analysis." For a while I saw the trend, when [country head of consumer banking] says 'analysis', it was the happiest moment for everybody - give Marketing Analytics to do! He's trying to push people to think more and to be more critical in their thinking.

Eric   So, in the past, the previous [business heads] were not ... not to say that they were not supportive of analytics, but were just not sure how to educate the awareness of analytics, or sponsor it at the senior level?

PAR2   You can say that, but he [the business head] is still around.

Eric   Oh! You mean [ORG2 regional head of consumer banking]?

PAR2   Yes.

Eric   I'm a bit surprised. Because [regional head of consumer banking] has always pride himself on being analytical. If you talk to him, he likes to believe he's analytical.

PAR2   No. He will come to me asking questions also. But in one of the meetings, he made some statement; I remember it clearly. So he was commenting about Marketing and Analytics. And he said something like, "Analytics can go wrong, but Marketing cannot. Marketing is really the thing you must get it right." Something to that extent. So when I heard that it's like 'wow' ... So that's his view of conventional marketing, campaigns ...

Eric   Intuition trumps data?

PAR2   Yes, correct.

Eric   In what area do you wish the BI&A team to be more involved in? You mentioned about sales incentive. If you think about problem-solving - everything is problem-solving. If you want to build a more consultative analytics team, what kind of areas should they consult in?

PAR2   At the high level, I would like the team to be more future-focused. Instead of explaining what happened in the past, spend more time anticipating the opportunities.

Eric   And you're not just talking about predictive modelling? You're talking about business strategy?

PAR2   Yes, business strategy. It's really into the future, the longer-term impact. The other one that I talked about falls under the BI - explaining the past should be easily done; should not even involve this team. There's a lot of task that we now do that is very operational. After you launch the campaign, you then have to fulfil it.

Eric   That falls to you too?

PAR2   Yes, so you can imagine how crazy things can be. It's another list extraction [for fulfilment]. That's why nobody wants to do campaigns.

Eric   Anybody from your Analytics team that has moved to the business? Or anybody from the business moved into your team?

PAR2   Not really. I do ask them what their [career] plans are, but it seems like they all want to stay in this area.

Eric   The current people in your Analytics team want to stay? They don't want to go to the business?

PAR2   Yes. Maybe it's self-selection. I remember in my previous roles; the objective of every analysts is to join the business; because you cannot do this [analytics] forever.

Eric   And you cannot become senior.

PAR2   Yes, exactly. I've been telling them that it's such a waste that they've been working in the bank for 10 years, and all you know is about data; you don't really know what happens at the branches … what a waste! They generally don't seem [to want to move].

Eric   Because of the profile of the analysts?

PAR2   I guess so. But ultimately the career path of an analyst is you have to go into the business. That's where you progress further.

Eric   Nobody from the business wants to come into Analytics?

PAR2   There are. That also reflects the understand of analysis. A lot of people think they can do analysis. "I know how to use excel." Recently there's been quite a lot of [resource] reshuffling within the front-line … the team leaders, even for some of the senior team leaders. They couldn't perform and were asked to look for other opportunities ... many people say, "I can do analysis."

Eric   Interesting …

PAR2   Something I also introduced this year - I introduced a Maths test for everybody who applied for an analyst job. It's a simple … I think it's secondary-level Maths, multiple choice, 40 questions … in half an hour. And many people can't [do the test]. I allow them to use calculator, but they still can't.

PAR2   I don't know how you feel, but I always believe that anyone doing analytics has to be smart. Has to be of a certain intellectual level. You must be able to learn. You must be able to communicate. That's very important. Communicate to understand; communicate to present ... very, very important. My current team cannot. So I now want to bring in new talent, and these must meet these criteria.

Eric   They must add to the team rather than be like the team …

PAR2   Correct. You should see those folks getting surprised with the [Maths] test. Caught them unguarded. I told them not to worry, that they just have to do better than the others; they don't have to score full marks.

Eric   Ok, so clearly today you are not being supported by any offshore team, but maybe by the PARM team, but they are technically onshore. But are you supported by any vendors or consultants?

PAR2   No.

Eric   So everything is in-house?

PAR2   Yes.

Eric   And even the IT team doesn't support you in the reporting?

PAR2   Ok, that's another sore point. There is a reporting system in the bank …

Eric   Yes, that's why I was asking.

PAR2   It's called 'report to web'. Thousands of reports are there. But most of the reports, I would say, are already obsolete.

Eric   But no one goes back to change the codes?

PAR2   Yes. So what happens is that sometime my team or those [analytics] individuals in different teams, they will go into this system 'report to web' to download the report, import into Excel, re-massage it, then probably combine it with some other additional data, then generate another report.

Eric   And nobody says to stop the obsolete reports since it's consuming CPU?

PAR2   No. I'll give you an extreme example. There is a one daily report like a data dump from the loan origination system. That report is 3,000 over pages every day. I asked, "How come so many pages?" "Oh, because it always starts from the same day." In the past, it started from some 2010 date ...

Eric   You mean it's cumulative?

PAR2   Yes, cumulative. It's not even delta. So the poor girl, she has to remember, "Yesterday I did until page 3,421. And today I have to download the new page." This whole thing is generated every day! There was already one clean-up. Last time, it was 5,000 over pages!

Eric   So for you [new] Chief Data Officer, this is one area [to work on].

PAR2   Oh, I've already told him! "This is a quick win!" If you just do this, straightaway, we will have lots of …. Here is where I think it's a cultural thing - people don't challenge. They just take it as it is. But a responsible manager shouldn't allow these things to happen.

Eric   In fact, the boss of the lady who has to look at page 3,421 should already be fighting this battle to make his staff's life easier.

PAR2   I found this out when I was evaluating self-service. As I said, this one year has been good learning [for me]. There's a lot of places we can add value and make improvements immediately.

Eric   You've worked in a number of banks. You've seen both the business end and the analytics end. If you were to rate ORG2, from 1 to 5, 1 being the best and 5 right at the bottom, how would you say ORG2 is rated?

PAR2   I think it's a 4 or 5. It's at the bottom.

Eric	The worst of all you previous experiences? Of all the previous banks you worked in?
PAR2	I worked in 3 organisations - Standard Chartered, ORG1, and ORG2. ORG2 is similar to ORG1 back in 2000.
Eric	This was just at the time when Anthony Johnson …
PAR2	Prior to Anthony Johnson joining. Anthony Johnson joined around 2001. He came in and initiated this whole transformation. Event-based marketing and datawarehouse. So basically, ORG2 is at that stage. 15 years behind.
Eric	And so if you had to build this team again; if you had a free hand - even being able to fire everybody and build whatever you need, how would you redesign? What will be the key elements of this BI&A team that you build? Would the roles and responsibilities change - like, I won't do this type of work or you would take on even more kinds of work because I feel this team should be inside [Analytics]; because I feel this team should be reporting here; a team supporting me in Philippines, in India ... So imagine it was a blank page.
PAR2	Specialisation is a must. The team should not be organised alongside the business structure. Some doing MIS, if you still require. Some doing campaigns. Some doing analysis. Some doing infrastructure. If I have the freedom, I want to beef up the technology capability within this team. A lot of times when we do analysis, for the analysis to be operationalised, you probably need to do some system enhancements that touch one certain things. So some technology capability, some IT tech capability within the team ... This is actually what I've learnt when I visited Ping An Bank [in China]. This is their model. They have big data team or whatever they call it. This team is made up of data scientists and there are people who regularise the reporting. And this whole group of technology people - they package the analysis into a solution. Which means when they deliver to the user, it's a plug in to whatever your system. Can be utilised straight away. So it's not just a PowerPoint but a functioning solution.
PAR2	And the reporting line - has to be at the division level. If it's consumer, it's consumer division. Because it's not really talking about Marketing but it's the whole business.
Eric	As an example of the reporting line – ORG1 doesn't have country analytics heads. ORG1 [BI&A], now run by PAR1, is a group level function …
PAR2	Yes, and he reports into Operations.
Eric	No, he reports into Customer Experience. But the head of Customer Experience double-hats as the CTO. But at the country level, they no longer have country analytics head.
PAR2	I don't have an issue with that [reporting structure]. The technology allows for a centralised operations model. It's not just within country centralisation, but across country centralisation. And I don't have an issue with that. In the past, every country has different regulatory requirements. You know, the

data cannot be accessed outside of the country. But as long as you can address all these, there shouldn't be an issue. The only thing is that we need to find a way to bridge the gap with the local knowledge. If it's really centralised, local knowledge may get lost. When you centralise, all you have is data. The only thing you deal with is data. But how do you interpret the data? You will need the local knowledge. Sometimes the local knowledge is even more important than the data. So that could be an issue. ORG1 for example - Malaysia is supported here [in Singapore]. Then they have a team in China - Chengdu. But it also reports into Singapore. China is probably workable ...

Eric   You would want to offshore to China if you can?

PAR2   Yes.

Eric   Why? What capability would offshoring give you?

PAR2   I'm not talking about availability of talent. I believe why ORG1 selected Chengdu is because they worked with a few universities [there] - they provide sufficient supply of talent. That's not the issue in China. But other parts of the market may be tough.

Eric   Even in Philippines?

PAR2   Yes, even in Philippines.

Eric   So if you bring those talent [in China] here, you would?

PAR2   Yes, but then for the bank, what's the point? For offshoring, there's always a cost element inside. But if you bring them here, there's no cost savings.

Eric   But is cost savings more important than quality of talent?

PAR2   I think it's equally important. I can go my boss and talk about the quality of talent, but he will ask me how much I'm going to save. When I present Unica to the bank's information technology committee … the CEO sits on it … everybody sits on it. No matter how much I talked about the functionality, ultimately they want to know how much money I would bring in. I didn't want this to be a productivity gain - then they would ask me how many people [in Analytics] to cut. I'm focusing on the execution efficiency - which will allow us to do a lot of things which we are not able to do now. Now you can only monthly campaigns; conversion is so low because it's lagging. With this, we can have turn into daily execution; improve you conversion rates. How much more money we can make over a 3-year period of time. Ultimately, everything comes back to this. You cannot give a qualitative ... it just won't fly. Why offshoring? Standard Chartered offshores in Chennai because of cost reasons. And now they've cut everybody in Singapore.

PAR2   There's one more thing related to this. Every now and then, this idea comes out. "Can this team be a profit centre?" Basically you charge for services.

Eric   But you are charging today, from an allocation perspective, isn't it? Your cost is allocated back to the products.

PAR2 | But with the other model, I will have the freedom … I justify myself … I will not have the constraint on headcount as long as I can justify. It will have a different kind of operating model. The danger of that piece is that it cannot be fully independent. It must be closely associated with the business. Especially the retail business. But I'm not keen to pursue this.

Eric | Who is asking? At the senior level, are they asking if there's an opportunity to make Analytics a profit centre?

PAR2 | Not in ORG2. But when I talk to people [in the industry], every now and again, this idea will come out. But actually within the bank it wouldn't work. You wouldn't have this kind of service provider model.

Eric | I've not seen it anywhere.

PAR2 | But theoretically, this can work. As a service provider. Just like technology. But technology is also a cost centre, not a profit centre.

Eric | The only true profit centre is Sales & Distribution. Even Marketing and Products can't say that they are profit centres.

PAR2 | Yes. Something to do with the accounting. How do you clearly define …?

Eric | "If I don't exist, there is no money." As simple as that.

PAR2 | Yes. This is what the Chief Data Officer told me - he managed to justify the value of his team each year - $200 million! I said, "We should have a separate conversation. You tell me how you come up with $200 million. I would like to do the same thing."

Eric | I used to do that in ORG3 also.

PAR2 | But there will be a lot of double-counting.

Eric | It's ok. In ORG3, we said double-counting is fine. But it must go hand-in-hand with my accountability and responsibility. So in ORG3, for example, I can say 'No' to the campaigns. In fact, only the CEO who can override me; the business cannot override me for campaigns. I have the authority So I can say, "I don't want to do your campaign because there is no ROI. I don't allow you." I can do that because all campaigns must come through the datawarehouse and I'm the only [access] source to the datawarehouse; nobody can get through it. And because I hold that responsibility to say 'No', I also hold the responsibility by saying, "Yes, I have to be accountable for the ROI of the campaigns." So it's fair. So I have to generate [the incremental ROI]. Yes, it's double-counted. The sales say "I've done it", the Marketing says "I've done it", but I can track my campaign revenue and I'm held accountable for it. In exchange for saying 'No'.

PAR2 | What is the number, back in ORG3?

Eric | When we track all the activities that we do, 25% of the Consumer revenue comes from us. That means we have authority to say 'No' on that 25% of the

revenue. The rest of it, whether we say 'Yes' or 'No', like the checking-savings account revenue is recurring, the bank will still earn whether you do campaigns or not. It's significant. To say that 25% of the revenue you have the responsibility of saying 'No'.

PAR2   That's pretty big actually - 25%.

Eric   Yes, across the region. So some countries are higher … on a blended basis it's 25%. Because we also control the sales incentives. I'm also the last authority to say 'No' [to the sales incentive]. I can stop payments, all the payments, to the branches. And only the CEO can override me. So they cannot change the [sales incentive] scheme without my permission. And I model the scheme. So the business comes to me and tells me their challenges, and I say, "Fine. You tell me your problems, and I will come back to you with a recommended solution. And then we can sit down and iterate and see what best fits. But I won't accept the business coming to me and saying this is my scheme." I say "I don't care." I need to look at it first.

Eric   Eric thanked PAR2 as they had run out of time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections.

Participant Code	PAR3
Title	Lead Analyst for Cards & Unsecured Lending, Group Customer Analytics & Decisioning
Organisation Code	ORG2
Date	November 24, 2015
Legend	[xxx] implies redacted due to participant confidentiality

Person	Transcription
Eric	Eric thanked PAR3 and explained the BI&A organisation design research.
Eric	Perhaps we can start by telling me a little bit about your background and experiences.
PAR3	I currently work for ORG1 and have been here for 4+ years. I'm part of the Analytics function, working with PAR1 [Analytics head]. We started off as a retail-only function, supporting only Retail Banking in Singapore. And then our profile extended and now we are a group function working across the bank, across the subsidiaries, across the group.
Eric	The shift from Retail [focused] to enterprise [focused] happened over these 4 years?
PAR3	It started while I was joining. When I joined, there was already this thought of moving us into a group function. It started because we were trying to integrate one of our subsidiaries - Great Eastern [Insurance business] into the bank, and the key question was that if Analytics was part of the retail bank, then where was the neutrality? Why should we [Great Eastern] pass our data to the Retail Banking function? So that's where it all started. When we started that journey to bring the data 'across the road', there wasn't any real answer. It wasn't obvious at that point that we should be moved into the Group function. Along the way, as we engaged and matured more, that we realised it made sense [to move into the Group function]. The original intent of why we wanted to centralise analytics was purely driven by a cost perspective. We already had the [BI&A] infrastructure, so why not leverage on the infrastructure and put another subsidiary in. Just like how we Chinese talk about having dinner - just add another pair of [chopsticks] ... That's essentially where it all started. But as we went along, we soon realise that there was a bigger play to it - it was really the entire Group function and Group vision that the Chairman of the board was trying to achieve ... and all that could be facilitated if there was a Group Analytics function that could tell you things from a single customer perspective. That was where the whole idea of turning us into a Group function solidified. So it made more sense and slowly it became more than just one subsidiary, and also included the rest of the regions as well.
Eric	What does BI&A mean to you or your company?
PAR3	We started this journey about 8-10 years ago, and in those early years, we were doing it [BI&A] more because it was one of those 'key words' that people said that one had to do. There was of course some need for some Statistics - like how big is my customer base, how is my products doing ... you know, the very basic kind of stats. As it went along, it slowly became clear to us that Analytics was a sort of strategic initiative; gives us strategic

advantage. Being a smaller bank as compared to the likes of ORG4 and the rest ...

Eric   But you know you make as much income as ORG4?

PAR3   Yes, but still, we don't have the kind of deposit base that they [ORG4] do. They sit on a 'gold mine' … we don't have that sort of 'power'. So we have to leverage on a few key initiatives, and Analytics is one of those key pillars that we identified would help us compete against the likes of ORG4. So that became the 'key'. As we matured, people [in ORG1] started to understand what Analytics could bring [to the table]. As we mature, it became part of the business process. And that's important. If it's not part of the business process, then people can just skip that route and directly go to the 'answer' without thinking about 'why' or 'what' the data is telling us. What I mean by that - say today, as part of the process of developing a product proposition, the 'inside' and 'outside' story forms part of the process. So the 'inside' story is what the data and analytics is telling us, and the 'outside' story is what the customer or the market research front is telling us. And that is one of the key pillars. And management would not sign off unless there's a real 'story' or data to back it up. So that becomes part of the 'DNA' of how we work.

Eric   Prior to joining ORG1 4 years ago, you had worked with an Analytics vendor - SAS. Has your understanding of BI&A changed from then to now?

PAR3   Yes. I had the opportunity of working with a few vendors - I was with SAS for 4 years, with IBM for maybe 8 years. And I was with a marketing agency for another 4 years. They were all vendor-based, but I guess SAS was unique because it was a software vendor - it was a tool. It's [understanding of BI&A] changed slightly, it's different, because whether you are in SAS or IBM ... in IBM, I was doing consulting, so you are more concerned about selling your ideas, selling you 'hours'. When I was in SAS, it was about selling the solution. But whatever it is, the end goal in that capacity was to sell something. Whereas, coming into an end-user role [in ORG1], it's about 'buying'; it's about getting the job done. It doesn't really matter what solution or which party you work with ... it's whether you can meet the business end objectives. So in the past, in the vendor role, BI&A is about a 'tool', a methodology of solving things. But now it's different; BI&A is about also about processes, it's also about the people. Because, say for example, a very simple idea of getting Analytics to help refine a target [customer] list; getting the best group of people to call ... analysing the profile and then scoring them to find the best group of people to call. You can do whatever it is; you can find the best model, you can find the best tool to do it, but at the end, if you don't have the right offer, the right people to sell it, the 'last mile' falls off and it doesn't really matter anymore. So, in an end-user role, you tend to think of how to get the last mile right; how do you get the rest of the partners in the whole value chain correct. Up to even acquiring the data ... how do you acquire the data in the first place. So that's the difference, I guess.

Eric   So which function does you BI&A team report into and why?

PAR3   There was a few iterations in my current function. Currently, we report into the Group Customer Experience division. It's a group function, so the folks like Retail Bank and Corporate Bank - they are our customers. And part of

the Group Customer Experience team is the other customer-related functions like Service Transformation, Contact Centres, Market Research, Customer Experience Design. So all the customer-related functions are grouped together in the same division; with a view that within this division, the focus is really on the customer. The divisions are really the different segments or channels. That's the thought process. Prior to this, we [Analytics] were part of the Retail Bank. I guess we were 'born' out of the Retail Bank because that's where the volume of the data is; that's where the most obvious application of analytics is. And then over time, we were elevated to a group function, and now we are part of Group Customer Experience.

Eric   Do you feel that you Head of Analytics participate in senior management meetings or is part of that senior management decision-making process?

PAR3   Yes. If you talk about senior management team, there are probably 2 'forums'. One is bankwide … and bankwide there are multiple forums that would involve the CEO, the COO, the individual division heads. At that level, the Head of Analytics participates in most of the meetings, though not all of them. And then you have the individual business unit's senior management meetings as well. There again, the Head of Analytics, or the individual lead analysts for those segments, participates as well. So yes, in ORG1, Analytics is part of the whole business meetings. In the meetings, we will discuss the business priorities and how analytics can value-add; what are the things that need to be aligned, across the different partner chains.

Eric   Do you feel that you Analytics team has sufficient decision rights? Participation is one thing, but it also has authority and decisioning rights?

PAR3   Of course! The views from the Analytics team, at least in ORG1, is respected. In fact, we are seen as trusted advisors. I think it's a partnership approach whereby there is no prescribed solution per se … business would come to us with a problem and objective, and together we would work out the solution. Sometimes it's very obvious what it should be, but most of the time, it's something we work together. There are of course boundaries and limitations, by budgets or channels or whatever it is, but at the end of the day, business doesn't dictate what we do, and we actually propose or work together with them on the solution.

Eric   Are you satisfied with where BI&A reports into - in the Group Customer Experience?

PAR3   I guess there's pros and cons, to be honest. Because when we were [part of] Retail Bank, we don't only participate in the management meeting, but we also participated in the day-to-day activities as well. Down to the branch campaign meetings. We still go today [to these meetings], but I guess there was a lot more close linkage in that sense [when we were part of Retail Bank]. But with only Retail Bank. But now because we are part of the group function, we can't go to every single meeting; and we have to attend the other business units' meetings as well. Meetings take up a big part [of our time], so we have to prioritise which meetings we go to. We attend the major ones like the planning sessions, the monthly meetings ... but the daily work meetings, we have to forgo some of these. The relationship with Retail Bank has probably softened a bit, but the relationship with the other units is

	stronger now; we didn't use to have those [other units] ... I guess it's a 'give and take'.

Eric   If you had the ability to redesign this [BI&A function] from scratch, would you put this under Customer Experience or would you have opted for a different reporting structure?

PAR3   I guess the need to move us out of Retail Bank would still be there. But the question is really whether we should be under Customer Experience or maybe Analytics should be a division by itself. Again, there are pros and cons. One of the thought process of why Analytics is part of Group Customer Experience was that we wanted the internal and external 'voice of the customer' to come together. Because as part of Group Customer Experience, we also have the external voice which is the Market Research function as well as the Service Transformation and Customer Assurance - that unit handles a lot of customer complaints and customer feedback. So the marrying of the internal and external voice actually matters as well.

Eric   I understand the [need for the] external voice. Should Market Research then be part of Analytics? Today, it isn't. Do you think it should?

PAR3   I think there are more and more reasons why it should today … in the bank. But today, it's separate. Whether it's because of history, whether it's because of skillset … Yes, if you are thinking along the line that one of the reasons why Analytics is under Group Customer Experience is because of the 'marriage', then yes, why not, to marry Marketing Research into Analytics is right. Because the fundamentals don't change - they [Marketing Research] still collects a lot of data, it's still data about the customer, and there is still a lot of analytical and statistical techniques that is being applied to arrive at certain conclusions. So functionally, if you look at it - 'Yes'. But by design today, it is still separate. Maybe one day it might be combined together.

Eric   PAR1 [PAR3's boss] mentioned about the 'verticals' you have in ORG1 - you run one of those verticals. Can you tell me a little bit more about how your vertical is organised?

PAR3   Actually I have a few verticals under me. I have the Lending vertical which is the secured and unsecured business. I also have the Group vertical which comprises of the likes of Great Eastern Life. I also look after the HR Analytics [vertical]. We recently started the HR Analytics function. Today the team is organised against the volume of work we do. A little bit by the skillsets as well. But the primary function is determined by the volume of work. For a couple of reasons - of course the more work there is, the more people I should have handling it in that vertical. Second, it's also [driven] by the way we charge out to the different business units - it's by headcount funding. For example, for HR, we support them. But how we support them is because they fund us the headcount. They give us 3 headcounts.

Eric   Those [HR Analytics] headcounts sit in the HR budget?

PAR3   The headcounts sit in the HR budget. But the resource is hired by us [Analytics] and managed by us, and they sit physically with us. Same for the group vertical as well.

Eric	So the Unsecured [Analytics] headcount budget sits with them [Unsecured] as well?
PAR3	For the Retail Bank side, it's slightly different. Because the Retail Bank has so many functions, we charge them one time as a Retail Bank, and then within themselves, they have different ways of splitting out [that cost] to the different units - e.g. x% to Lending based on usage of Analytics, y% to Wealth [Management], and so on and so forth. But for the rest of the group functions and subsidiaries, we charge them via the headcount methodology.
PAR3	So, in some sense, it's limited by the number of headcounts, but that is also determined by the volume of work as well, and the type of work we engage with them. So it becomes a very easy conversation at the end of the year - for the type of work they need us for, how have we been able to fulfil them, and what do we need the following year.
Eric	So logically, they would give you more headcount?
PAR3	Absolutely. Because if the value can be replicated … if one person can deliver 'X', then hopefully, 2 persons can give you '2X', or maybe even 'X-squared'.
Eric	With regards to roles and responsibilities within the team - are there clear distinction in terms of separate type of responsibilities within each of your verticals?
PAR3	We used to have a structure where the folks in the team are very 'functionally' cut. Folks who are dealing with campaigns will only deal with campaigns. Folks that are dealing with report will only deal with reports. Folks who are dealing with analytics ... the more advance kind of analytics ... will just deal with that. So we used to have that kind of structure. But over time, we found that that kind of structure had limitations, especially to the analysts. They feel that their career is sort of restricted; they can't grow beyond that. And if we had that kind of structure, we also can't move [promote] people up. There is no [organisational] hierarchy where people can see [career] development. So that's why we broke that down, and as much as possible, we try to encourage analysts to be able to handle a request end-to-end. So they can actually take on a single request, and they can see it starting from the requirements, understanding what the client needs, crafting the solution with them, to looking at the data and then crafting the analytics, making the recommendations, implementing the campaigns, and then tracking the results. So as much as possible, we want to see them [the analysts] be able to do it end-to-end.
Eric	Does that not limit the volume [of work] you can do?
PAR3	Yes. It's a give and take. I guess where we find the balance is that within the team, there is still specialisation. So some folks, even though they can do end-to-end now - there is no hierarchical barrier to stop them from taking the process end-to-end; but still there's specialisation within the team. So within my Lending Singapore team, there are guys who are better at handling

campaigns - where 60-70% of what they do is focused on the campaign side ...

Eric   And you assign them to work on the campaign? You 'piecemeal' the work out?

PAR3   Yes, we can still piecemeal the work out.

Eric   You make the decisions?

PAR3   Yes, we make the decision. The leads within my team - they are the ones that actually do the assignments. So there is still some assignments per se. But by and by, we would try to encourage the analysts to take one request end-to-end. And the other side of the balance is that we have an offshore team. So, the offshore team sits in China, Chengdu. And we are able to 'farm' work out to them - the guideline is that some of the more mundane work is farmed out to them; work that doesn't require touching sensitive customer data, we farm out to them. Sometimes, a Singapore analyst who is handling work end-to-end, may farm out a piece of the work to them [Chengdu team], so that he can still have oversight of the whole value-chain, but yet he doesn't have to be hands-on in every single piece of it.

Eric   When you made this transition to allow the analysts to handle a request end-to-end, do you see the quality of the work, the outcome, the results improving?

PAR3   Yes. Fundamentally because it's done by a single person. In the past, we used to have handover issues. The analytics team would build a model, they would 'throw it across the fence' and say, "Hey, campaign team, take this and run with it." And the campaign team would have no context behind 'why' and 'how' and 'who'; they'll take it and do whatever they think was correct; and so sometimes there are handover issues. And in this kind of model, you are able to do a lot [of work], but you might not be able to look at things from a different perspective. If it's handled by a single person, the person might think about, "Hey, what if I look at it this way? Have I not considered it that way?" There is space for the analyst [in an end-to-end situation] to consider different alternatives; there is space to consider 'what-ifs'. Whereas in the more 'production-driven' model, where people just handle campaigns, the end outcome is really just, "I want to finish this in the quickest time." And they just take it and they run with it.

Eric   But it [the end-to-end approach] requires the business to slow down the analytical process …

PAR3   Yes, it was a conscious choice. During the time when we were doing the transformation of the model, one of the things we did was we looked at things in terms of the whole portfolio, all the requests that we had done over the last couple of years, and we found that actually there were a lot of requests that is not value-adding - list pulls, fulfilments, data mappings. Stuff like that takes up a fair bit of the team's time. And one of the promise we made to business was, "Let's take this out. Because that's not what you paid the Analytics team to do." Even though it's convenient. Even though coming to the Analytics team is probably easier for them then to approach IT to do it.

But that's not the real use of the Analytics team. Now, if you cut that [the non value-add work] out, let IT or the Operations team handle that, and you devote the freed-up time to real analytics work, the value you get ... the returns is there. So we did that sort of study and brought it to the business. And that's the commitment we have made ...

Eric   Was it difficult convincing the business?

PAR3   It wasn't difficult. Because the people who are asking for those more operational requests are the day-to-day hands-on team; the guys in the 'engine room' doing it. To them, they don't really think about what's value-adding. To them, they are just thinking, "What is the easiest way to get my job done!" And giving a call to the Analytics team is the easiest way [for them] to get the job done. So I guess if you sell it top-down, the commitment is there, let's make sure we change the analytics team around to focus on value-added things, and all the operational stuff ... yes, there is still a need to do it, but let's get the Operations team to do it. It's cheaper to put 3-4 headcounts in Operations and let them handle it then to put 1-2 headcount in Analytics to handle the increase in volume. So I guess that's the business case there.

Eric   In terms of where the analysts are located, PAR1 did share with me that they sort of toggle between seating with the business and then coming back to the Analytics room. Can you describe a little bit more about that? How do you decide when you should be sitting with them [the business] and the value of sitting or not sitting with them?

PAR3   It depends on the maturity of that vertical. In my team, I run the Lending. Regarding that team itself, they have been with the business for a long time, because we used to be with the Retail Bank. We don't sit with business per se that often. We attend meetings together. We go to them when there are questions and things to sort out. They come over to our place quite often as well. So, there's sort of a 'handshake' that's already been done many years ago. We don't really sit with them that often. But if you consider a different vertical like the Great Eastern Life, where the journey started maybe 2 years ago ... so we sit with them [Great Eastern Life] more often. Primarily because we are just one analytics team function and we don't have real connections into their channels and other parts of the value-chain. So we sit with them, more for the fact that we also want to be exposed to the other parts of their business. Because if not, our only point of contact would be their Marketing [team]; because that's where we connect up. Because the function that funds us is actually the CMO [Chief Marketing Officer]. If not, we would be sitting with the CMO, with no view on products, with no view on distribution, with no view on Operations and the rest. And so, the intention of sitting with them is really to get more in-tune with their other business functions. So, it is not a hard rule to say that we sit with them twice a week or three times a week. But we try as much as possible to spend at least one day a week to be there with them. And it all depends on meetings that are being scheduled, it all depends on needs as well. Sometimes, we may be, say, with the distribution team for 3 days because there's going to be a big event that's coming up ... so we'll spend time as part of the project team to get things done, and they see us as part of the working team as well. If

there's no projects, or if things are in place, then it'll be a one-day-a-week catch up with the CMO and the marketing team.

Eric   Just to clarify - Lending includes credit cards?

PAR3   Lending includes credit cards. So it's unsecured (including credit cards) and secured lending, including mortgages and auto loans.

Eric   So you sit with them once a week. Do you pre-announce when you would sit with them? Like announcing when the doctor is coming to the village, so that they can schedule some time to see the doctor?

PAR3   Most of it is pre-scheduled. We don't have a desk there. Unlike my Great Eastern team where the ladies have a space there, and they can come uninvited if they want to; they have the corporate [premises] card so they can tap in; they can visit, they can station themselves there if they want to. Like my HR [Analytics] vertical - my HR guy has a desk at HR, so they can tap in. They have a desk there, and they also have a desk here. But for the Lending team, I guess because of the size of the team, we don't really have dedicated area there. So we don't go unannounced; typically it will be a scheduled meeting.

Eric   So given a choice, assuming there is no real urgency to be there, to be onsite, do you people prefer to be there or to be back at HQ?

PAR3   The tendency of human nature is that you'll be more comfortable sitting at you own desk. But there are regular meetings to force us to get together. We have a weekly meeting. We have a fortnightly catch-up with [country head of consumer banking], and the Lending team. And those meetings will be where we will be together; a 'forced' meeting together as a team. And of course in the banking function, there are pre-meetings before the [actual] meetings ... things like that. So there are opportunities that 'forces' us to get together. There is hardly a weekly that goes by where we don't see each other [the business].

Eric   Who manages the relationship with [country head of consumer banking]? Is it yourself or is it PAR1?

PAR3   With [country head of consumer banking], I guess it's a jointly managed relationship. Because if it's specific to Lending, specific to some initiatives that I'm driving, then … it's a very flat organisation … we go directly to [country head of consumer banking]. The only relationship that PAR1 manages more exclusively is with the C-level. Because we [PAR1's one-downs and below] don't get to see the C-level that often. So it's with the C-level that PAR1 has a more exclusive type of [relationship] management. At that level, they will be talking about the value of analytics, the total value that analytics brings in, what are the strategic initiatives that analytics is going to do next year, and so on. So those would be probably more PAR1-exlusive, but if it's meeting with the individual business heads, the vertical heads would do that. So for example, I would meet directly with the [ORG1 insurance subsidiary] Singapore managing director - so I manage that relationship.

Eric	But under [country head of consumer banking] there is the Wealth Management and the Lending, does [country head of consumer banking] play the role to sync up the 2 [with the analytics team]? Or do you sync up with you own peers? Or is it PAR1 doing the sync up?
PAR3	I guess it's a little of everything, to be honest. We have a segment 'play' as well. I guess from a Retail Banking perspective, the segment team is supposed to be the 'glue'. A lot of things is driven through that channel [segment team], and the way [country head of consumer banking] looks at it is that he's also a facilitator as well across the different product lines. He's also looking at the segment team to be that 'glue' to pull it all together. From an analytics perspective, we highlight issues, we highlight challenges, we highlight better ways of doing things. But at the end of the day, it is the Retail business' call. So, a lot of the times, the business heads within Retail Banking, they are the guys that sync up amongst themselves. But of course within our peers, within PAR1's team, we do regular meet ups, we have heads' meetings, we have leads' meetings, and that's where, from an analytics perspective, we sync up as well.
Eric	If there are cross-functional … let's say like [product] bundling … how do you decide which vertical would take the lead?
PAR3	To be honest, it's sometimes difficult to decide. But as we go along, the grey areas become less. Let me give you an example. Other than Lending, the [ORG1 insurance subsidiary], and HR, I also look after the Channels vertical. The e-channels. So, the digital team, internet banking; and internet banking cuts across all customer segments and sometimes it's difficult to decide whether it's something to be done by the Wealth team, or it's something to done by the Lending team. But over time, I guess we sort of sort it out. For example, if it's something to do with internet banking, even though it involves Premier [Banking], or even though it's to do with the selling of Wealth [Management products], my team still takes it. Just because it's still something to do with internet banking. The other [Analytics] team – [xxx]'s team; he looks after Wealth and Segments. So with Segments, even though it may be a credit card play, he will still handle it. Because it's driven from a segment's perspective. But sometimes, it takes us [[xxx] and myself] to sync up to actually decide who is the best person to take it on; and sometimes it's also driven by the client themselves. Say for example, if it is a joint initiative Wealth and Card team, but [country head of consumer banking] has assigned [regional head of credit cards] to head it, then in that case, it falls into my realm. I will work directly with [regional head of credit cards] to work it out.
Eric	Can you describe a little bit about the background of your analysts?
PAR3	I think we have a very good mix. We have folks that come from IT - so they have a very deep understanding of data, they have a very deep understanding of systems, they have a very deep understanding of source systems. So that's one category of people that we have. So these folks tend to gravitate towards ... guys that are more comfortable with handling data. In fact, we have a role within the team, and that function handles just data acquisition and maintenance of data. We have a profile of folks who come from a very analytical background - Masters in Statistics and Machine Learning. We

have folks that come from the business - I have a guy who was with the Cards team for maybe 8 years before he joined us. And of course we have folks coming from totally unrelated industries - we have folks who came from hospitality, we have folks who came from political science ...

Eric   Do they [folks from unrelated industries] do better?

PAR3   They don't necessarily do better, but there is probably one attribute they have that is stronger than the rest. They tend to be able to ask the right questions. Because they come from a different background, they don't get bogged down in "how am I going to do it". So, if you don't think about "how am I going to do it; is it going to be by this technique or that technique", you tend to take a more broader perspective. You tend to think about, "Hey, what's the question that I need to ask? Why am I doing this in the first place?" So the starting point is the 'why'. So they tend to do better in that aspect.

Eric   Is there as sense that, "If I ask the question, then I have to solve the problem myself?" So I can make it [the questions] very complicated, but then I'll have to go solve it. So I don't want to make it too complicated.

PAR3   I guess it's the other way around. If I am someone from the analytics background, my thinking is confined to the kind of techniques that I'm familiar with. Whereas for people not from this background, even though you have an appreciation for the techniques, and eventually you will still be the person who's going to do it, you tend to think a little bit broader. You tend to think about the 'why' first and not be restricted. That's the observation that I have. This is just my general observation and may not be true for all.

Eric   If you had to expand your team, what kind of talent are you looking to acquire?

PAR3   I would like to have someone who has the best of all 3 [skills] - someone that knows data really well, that has been exposed to system and data, and someone that understands business, understands how business actually works, and also someone with that logical thinking mind who can ask the right questions. So like it's all 3 combined - that's the ideal profile. But it's really, really difficult to find these sorts of people. We probably have a couple [of them] in the [existing] team, and they are probably the ones that are excelling in their roles. But to be able to find that kind of people is not easy.

Eric   And for these couple of people who are excelling in their roles - these will be the logical successors of the function?

PAR3   Eventually, I guess, yes. If I think of a team, and I draw the analogy with a soccer team - in the soccer team, you need a backbone of defender; these are the guys with a very simple job - to clear the field and make sure that no goals are being scored. I would associate these defenders with the guys [in the Analytics team] who are more technical in nature. And then you have the mid-fielders - the 'engine room' - the guys that do most of the work; running up, running down, connecting up between the strikers and the defenders. And then there are the strikers. They are the guys that score the goals, they are the guys that get most of the glory. I guess the folks that have an

appreciation for the skills across all [3 categories] - I would see them as the strikers. I can't have too many in the team, but I do need them. And eventually who will become the manager, the coach, I guess if you look at the trend of players who eventually gravitate to become managers, they are probably the stars. They could be the strikers. But they are typically the stars of the team. Could be the mid-fielder as well, but typically they are the stars of the team. Or they could be someone external. But I guess the message is that we need a mixture of all different types of skills and we can't have too many of the strikers

Eric   Can you give me a sense of the types of business problems that the team works on?

PAR3   I think there are a lot of different types.

Eric   But how would the business present the problem to you? How does it start off?

PAR3   We can talk about the different types of problems we solve, but there are some that are very mundane, very BAU, very structured. For example - how much did people spend on our cards this month? That's a very simple one. You can tackle it with a scheduled report - once you've built it, you don't even have to look at it again. The second type of question is probably ...

Eric   Sorry to interrupt, to me those [the earlier examples] are questions. But if we say 'problems', that means in the sense that when they are how much people are spending on the card this month, what's not being expressed is the problem. Do they [the business] always start the engagement with the business problem? For example, "I'm not getting enough sales." And then you get into the question, "How much are people spending?"

PAR3   I guess that's the other spectrum of the problem. It's a spectrum. Most basic business problems are, "Tell me how my business is doing." And that's the "how many people spend?" or "how is my AUM this month?", "how much deposit size this month?". That's "how is my business doing". And then in-between, you have questions like, for example, "who is my best customer?" A little bit of ambiguity there; things to clarify. For example, you probably have to ask things like, "what do you mean by 'best'?" And once you clarify that, it's probably easy to come up with the answer. To the other end of the spectrum - the type of questions that you talked about. "I'm not doing well this month. How do I improve on business?" "I want to redesign my card proposition - how do I go about doing it?" So, those types of questions are probably the most ambiguous in nature and need a lot more engagement to answer it. I think we handle the whole spectrum of it, using different ways and approach. The volume of the requests will probably be in the first 2 categories. And the more strategic ones, the last type, we don't do a lot of it ...

Eric   But would you want to do more of it?

PAR3   I guess, yes. But to be honest, I think it's also [dependent] on the structure of the business as well. Because the way business is engaging within itself, they probably have a lot of those strategic questions, but they themselves may not

have the bandwidth to handle all that kind of questions. So they probably choose what are the key focus for them this year. For example, they want to be the #1 in Cards this year. They want to revamp their proposition in this area. They want to have a Rewards cards that can compete with the likes of ORG3 this year. So they choose their battles to fight. So we are aligned to those business objectives, and those are then the big questions we start to distil and breakdown and say, what are the small things we need to do to finally achieve that [the objectives].

Eric   The business shares their priorities with you? For example, "These are my 5 priorities. And within these 5, here are the ones where I'm most uncertain about …"

PAR3   So the engagement normally starts around this time of the year. Like we had our session with Desmond and his team 2 weeks' ago. They got us in - the whole Group Customer Experience - to talk about his priorities for next year. These are the 1, 2, 3, 4, 5 areas, these are the things I need Group Customer Experience or Analytics to help me with, and then when it comes Jan [2016], we would have a planning session where we could break out into smaller teams; we then start looking at the things we need to look at, as a project team or as a smaller team to work on.

Eric   So let's take these 2 spectrums - in a way, they capture what I call the Uncertainty vs Ambiguity or Equivocality spectrum. So I would assume you are already well equipped to handle Uncertain problems, because they are very specific - fetch the data to close the gap. For the Equivocal and Ambiguous questions, do you feel that your team is adequately designed, whether from a talent, from an experience, from a proximity perspective, to be able to handle these sorts of questions or problems? And have there been incidence where they have not been able to handle it, and 'why'?

PAR3   To be honest, I think there's room for improvement for sure. Today, I'm still very involved, regardless which spectrum it is. But more so in the last category of problems. And my vision is that if I can totally have my team handle the whole thing, that would be the best. My job is to make myself redundant. But the last part of it - if I can have the whole team tackle that sort of questions, that is the end state I want to achieve. But can I do it today? Within the team, I probably have 3 people, including myself, that can really engage business at that level to really understand the problem and then work with them to craft the solution. Because it takes a little bit of the consulting mindset.

Eric   Excluding yourself, why is it that these other 2 people can do it and the rest can't?

PAR3   I guess [these 2] are the striker profile that I talked about. They probably have an appreciation of all 3 areas.

Eric   Do they come from a particular type of profile or background? Like consultants?

PAR3   One of them was previously from business, so he has a very, very strong business background. But when he was in the business, he was also working

on the analytics side of it. So he's very strong in analytics and business. And the area he had to 'top up' when he came over was really just the technical and the data side of it. Which was probably easy once he invests some time in skills training and such. The other person is really just because he had been with the bank for a long time. His background is more technical in nature. But he has the aptitude to do it. He doesn't have the consulting background but he has the aptitude to do it. So he knows the right questions to ask, he understands stakeholder management, he understand listening skills and solutioning. So they are both very different in terms of background, but once they add the different skills they've acquired over the years, they could probably be able to do it.

Eric   How many people do you have under you?

PAR3   I have about 10 or 11 folks.

Eric   So let's say 11. So 2 out of 11 can solve the more ambiguous type of problems, while the rest would be somewhere in the middle or closer to the Uncertainty end.

PAR3   Yes.

Eric   If you look at the sort of problems that the business generally wants to engage in, do you feel that you are adequately staffed to meet their demands for the different types of spectrum of problems?

PAR3   I think because the very ambiguous questions are filtered or distilled through that whole planning process - we start to look at priorities and then start to filter down to where they need help and then solve the problems from there - the kind of assignment can happen through there ...

Eric   So you are saying that by the time it comes to you, when you first lay eyes on it, some level of ambiguity has already been removed?

PAR3   Some level, yes.

Eric   Or do you do that job of removing that ambiguity [for your team] because of the early interaction upstream?

PAR3   I think it's a little bit of both. Sometimes I would try to remove that ambiguity as much as possible, sometimes it's about breaking the problem down into smaller pieces and say that, "Hey, you want to be #1 in the market but first you have to look at getting a card that you can win in the Rewards space. So maybe let's look at that as a stream of work."

Eric   Sorry to interrupt, but let's take this particular example. You want to be #1 in the market. And you concluded that you need a Rewards card as the killer. What makes you say that - maybe I need an everyday card, I need a travel card, a premium card?

PAR3   That's a very good question. It's all through the whole year of engagement and understanding where the business is heading. We know all the business KPIs, we know where the business is today, we know where we're winning,

and we know where we still have gaps. We know things that we have developed this year that was the outcome of the ideas that we wanted to craft last year; so last year, we said we needed a Premium card and this year we spent the whole year doing that. And now that we have a Premium card, that where we need to head towards [having a Rewards card]. So I guess it's true that the interactions and being with the business is needed to be able to give that sort of insights and recommendations. But that's just an example. It may not be the fact. But the gist of it is that, sometimes you try to break the bigger ambiguous problems down to a smaller one and try to tackle that. But if that's not possible, then it's trying to split it amongst the 3 of us to try to engage business to try and understand where the real question or the real problem is before we dive into delivering the solution.

Eric   Is there a very wide range or very narrow range of ambiguous problems that comes to you?

PAR3   By the fact that we split by verticals, the types of problems are more confined. It will all be within the lending space, say. Or it's all within the HR space. Or it's all within the Insurance space. Just by the fact that we are aligned by verticals. So there is ambiguity within the verticals, but I would say that it still can be managed. Because as we work in this vertical, we get more participation within the vertical, we tend to appreciate already what are the challenges before the business puts it down on paper, "Hey I have this problem." We already know a lot of things that are coming because we are like sort of part of the business. We already know what would happen when a lending cap has been put to 12x by MAS. So the business problems are more confined.

Eric   So even within Cards, you can have ambiguous questions like, "Should I launch another Rewards card?" "Should I take this market?" "Should I price it in a certain way to gain market share?" for example. Because clearly then, you would need to make the trade-off to see if that's really the right thing for the business. Versus you can even get into the space such as, "Should I re-engineer my customer service approach to credit card handling?" "Should I look at my fulfilment process?" "Should I look at my call handling process?" "Should I look at my authorisation process?" Does it get into those kinds of broad, ambiguous business questions that are not just marketing or customer-centric issues?

PAR3   It does, I guess. But I think what we are trying to say is that once we are part of the business … these sorts of questions … year-in, year-out, we know where our problems are. It's just like your body - you have a back pain; you know you have a nagging back pain. And you know for years the back pain is there - you might solve it now, you might not solve it, but you know you have a nagging back pain. One day, it will 'float up' and you say, "Hey, I don't walk well." But you know the real problem is that you have a back problem. And because of the fact that we are so closely knitted with the business, we already know where the ailments are. We know, for example, that we need a Rewards card, but do we do it now or do we do it later? It will be talked about; it will be asked, like "What should be the structure of that Rewards card? How do we compete? Should it be a Rewards card that is catering to the higher tier or the lower tier?" Those will be questions that come. But we already know in the back of minds that we need a Rewards

card. So when the questions come, we would already have the context behind it. And that's why we move to this vertical function. Because in the past, these sorts of knowledge only resided with the leaders of the analytics team. And the rest of the function - the campaign team, would not know - they just do without knowing why. The modelling team - they would not know why they are building a model. And when they are picking the [modelling] variables, they will encounter the question - which variable should I pick? And they have no context behind it. But now that we've changed to the vertical structure, and they get full exposure to business, day-in/day-out they are just talking about Cards and Cards. The context would hopefully already be there. So they don't have to go and revisit the background - what is the context, why are you asking these questions. And they could jump slightly closer to the prescription itself.

Eric   So this context that the vertical structure now has … when the questions come [from the business], do they [the analyst] have the ability to recognise what is an Uncertain problem and what is an Ambiguous problem? For example, they can quickly classify in their minds that "This is a data fetch." "This one is actually not straight-forward. We need to sit and discuss." "This one, even if I fetch you the data, doesn't quite answer the issue you have." Are they [the analysts] able to recognise that upfront?

PAR3   I think, yes. Because the Analytics team has trained them [the business] in terms of what we need from them [the business] to come to a conclusion, to come to a solution. One thing for sure, when they [the business] ask the questions, at least today, they can be comfortable that they don't have to tell us the history of why they are asking that question. So that's a fact. So, for example, a recent example, we are losing money on a certain portfolio, and maybe it's because of the market conditions, maybe it's because of a certain group of customers defaulting a lot more, and when they [the business] comes to us, they will say, "Should I tighten the credit policy? How should I tighten the credit policy?" It's an ambiguous question, but they would already know that we know the background, like "This month we lost $10 million because of 2 Filipinos defaulting!" They [the business] know that we [the analysts] know. Asking us the question doesn't mean they don't have to tell us how to craft the solution ... they still have to tell us - things like, "The objective here is to tighten the credit policy so that we are still able to allow certain foreigners to come in but yet tackle certain segments that are problematic. I don't know what the answer is, I don't know how much to tighten. The data should tell me. But tell me what you need [from the business] to help you find the answer. Can I give you all the Filipino customers that we've onboarded in the last few years?" So it become easier to come out with the answers, but it's still ambiguous. They still don't know what is the answer to it; they still don't know how to solve it.

Eric   They don't really know what is the problem - they know the symptom.

PAR3   Yes, it's a symptom. They don't see the problem yet. The problem might not be Filipino per se. It might be certain application process or it could be the application score itself. It could be certain products because of the marketing we do that attracts certain profile of customers. That could be the actual real root cause. But they don't know it yet. They say, "We're ready to solve it. You know the context. Take this. Help me to solve it."

Eric	You grew out of a deeply embedded [in Retail Bank] function to become a Group function and therefore you had the history of sitting with them [the business]. But if you didn't? Let's take the case of Chengdu who don't have the opportunity to be with the business - how material is that to having those contexts and taking on the ambiguous problems?
PAR3	We recognise that that is going to be a challenge. There's always a limitation to what Chengdu can do. They are very smart people, absolutely smart people. We visit them like twice a year. And they visit us - we bring them here 3-4 times a year, by batches, not the whole team. They are really, really smart and brilliant people. One of the constant challenge we manage is how to give them more.
Eric	What is the rationale of wanting to bring them here?
PAR3	We bring them here of course to give them the context. That is the main gist. We try to give them the context. We set up the meetings with the business for them. They sit in. They are probably not in the position to lead the discussions, they are probably not in a position to participate actively, but at least they sit in. To understand the context behind 'why'. To put a face to the name. That helps a lot. Through listening, at least they know why it's being asked, what is the expectation they [the business] are looking at. And when they go back, they [Chengdu] do proactive suggestions - "Hey this is what I can do to help you change this."
Eric	Do you see that someone who has not been here, they suddenly come for that X days or X weeks and they go back. Do you see a change in the quality of their output?
PAR3	Yes. When they come, we usually do 2 things for them. Trying to give them more context, such as attending meetings. Two - it's really sitting with the our [Analytics] team. To train, to learn, to see what are the techniques the team here advise, and again to put a face to the name as well. Sometimes when we want to brief them on certain projects, having a face-to-face is much easier then to communicate over the phone, through emails.
Eric	The business never communicates directly with Chengdu? Only the analysts communicate with them?
PAR3	Yes. They never communicate directly [with the business]. Language is still a barrier.
Eric	But do you say [to the business] that this is work done by the Chengdu team? You can do a conference call and Chengdu can present on that conference call.
PAR3	I think language is still a barrier. We copy them [Chengdu] on the business communications (emails), we give them credit and recognition for it [the work they do], but I guess … I'm not sure if it's because it's in Chengdu itself, but in Chengdu, we notice that the command of English is still not as strong as say Shanghai or Beijing. They still have a very strong accent - hard to understand them on the phone. But of course, there are folks there that

have been through a foreign education and then come back to Chengdu and their command of English is probably slightly better, but still, it's because of the lack of practice ... we think it's more effective for us to do the presentation.

Eric   If cost was not a consideration, would you even have considered Chengdu?

PAR3   No, I guess not. The original intent of considering Chengdu was cost. That was the primary intent - 6 to 7 years ago when we made decision to be Chengdu. To be honest, nowadays, they are not that cheap anymore. The cost advantage has been eroded. And if you ask me if we were to do it again, would we do it in Chengdu, maybe not. There are other options ...

Eric   But would you still offshore?

PAR3   Maybe not as well. If we were still able to maintain those few headcounts and say we have a choice to hire here [Singapore] or there [Chengdu], then, if we were to do it again, I would hire here.

Eric   So this is an interesting context. Because you are Singapore-based bank; it's the same question I asked PAR1. For you, offshore means Chengdu. Because you are seeing it from the lens of a Singapore-based bank. But ORG1 has a Malaysia presence, for which you Singapore team provides support - through Desmond and his team; at least from a regional strategy perspective. But you are an offshore entity to ORG1 Malaysia. And in that context, are you effective?

PAR3   It's a very good question. Actually, one of the reasons why we offshore, is, like it or not, always the issue of seasonality. The seasonality effects as well. So if we are just looking at Singapore or Malaysia, some months Singapore would be a lot busier, some months Malaysia would be a lot busier. And if we had an offshore team, that offshore team acts as a buffer. If the Singapore team doesn't have the capacity for it, there is always a Chengdu buffer team to handle it. And because the holidays are spread out across different timings, we can sort of like balance it out. And similarly for Malaysia. Consider the other spectrum - let's onshore everything. Let's take the 10 headcounts [from Chengdu] and split between the 2 [Singapore and Malaysia] and put them within the countries - there are obviously benefits there. Considering nowadays we are stickier on data coming out of Singapore, what you can or cannot do offshore. It helps in some areas. But then it comes to those times when you have fluctuations in demand, it would be a lot more difficult to handle it; considering Chinese New Year ... that's a bad example ... considering Hari Raya in Malaysia ... everything shuts down and least you still have the Chengdu team to do it, otherwise the whole Malaysia team shuts down. So the benefit of offshore is cost [reduction], it's load balancing. So would we do it [offshore]? I think it's a very tough question. Some kind of mix model would make sense

Eric   What kind of mix model?

PAR3   Maybe having the offshore team in Malaysia itself.

Eric   Keeping it geographically nearer? Sharing the same culture and language?

PAR3   Same culture, same language - yes. But also maybe if it's in Malaysia, it acts both as a local as well as a regional resource.

Eric   Today Chengdu [team] does not support any business in Chengdu?

PAR3   Yes.

Eric   And therefore, there's no opportunity for them to gain local context.

PAR3   Yes.

Eric   So if you had to build an offshore, you would build the offshore within one of you geographic locations?

PAR3   Yes. Maybe that's an option. It still has a little bit of the load balancing element, still has a little bit of cost [reduction] element but less so.

Eric   How would you measure success for you BI&A team?

PAR3   There is the soft and the hard aspect. The hard aspect is of course we measure how much shadow revenue we have generated …

Eric   For every activity that you do, you track the shadow revenue?

PAR3   Yes, track the shadow revenue. And so we are able to say that we contributed this much of lift, this much of shadow revenue because of our activities. So that's the hard measurement.

Eric   But one can also argue that with a little science, you would always be better off. But is that necessarily success? What makes you feel proud when you wake up in the morning?

PAR3   That goes to the softer aspect of it. Which is what the business thinks of the value add that we give them. Every year, we run a customer satisfaction survey which we send to the likes of Desmond [regional credit card head at ORG1], Kenneth [works for Desmond] and whoever, and ask them a series of questions - things like, do you think we add value? Would you involve us? Would your business still make it if you didn't have us? Are we proactive? Rate us from 1 to 5. Every year we run that. We get verbatim from them as well to say what are the areas we can improve ...

Eric   And the business does give inputs on the areas for improvements?

PAR3   Yes, the business does give. And they know that this [customer satisfaction survey] is something we run every year, so they sometimes look at it as a way to 'whack' us. Some of comments are complimentary in nature, but some are really hard. But every year we do get the same sort of things - like you process can be fine-tuned; it's really hard to ... you have to fill out a form. But those are audit requirements; we have no choice but to fill it in.

Eric   Let's stay on this customer satisfaction survey for a little bit. Do you get the same usual suspects who are always unhappy, year-in year-out?

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PAR3	Yes, I guess so.

Eric	And are they always unhappy for the same reasons?

PAR3	Yes, I guess so.

Eric	What are one of those reasons?

PAR3	Usually we find that if we do our job well … of course we try to engage at the higher management level … those are the folks that we tend to do better [in customer satisfaction]. When we survey, we survey the whole spectrum.

Eric	But you focus [you activities] on upper management?

PAR3	We focus a little bit more on upper management. When you talk about 'value', it means different things to different people. At the top, it means, "Do you help me to generate revenue? Do you help my business grow?" When you talk about the bottom, it's "Do you help me to do my work easier?" So 'value' to different people means different things. We notice that as we go along, as we try to change ourselves, we tend to do better at the top, and the bottom we tend to do worse. Which is intentional. We recognise it. Which is by design, which hopefully ... we still have to do things here, like it or not, we still have to generate some of the more mundane campaigns, help them find 5000 customers to target for $1 Starbuck vouchers ... but hopefully if we do our work well, the value should be generated at the top.

Eric	If the pursuit is value-generation and the seniors understand it, do you see that being able to deal with more ambiguous questions allows you to generate more value?

PAR3	Yes, I think the ambiguous questions is where most of the value is generated. But again, there's only so much appetite that the business can take on.

Eric	Ambiguous but at least aligned to the business priorities - like 5 business priorities, 5 business strategies. Because within that, there is still a lot of ambiguity?

PAR3	Yes.

Eric	The more it's aligned, the more I can deal with these sorts of ambiguous types constructs, the more value I can generate. That's what you believe?

PAR3	Yes, that's what I believe.

Eric	Is there evidence to the fact?

PAR3	Yes, I guess so. Not sure if we have done any studies to actually prove that but the general thought is that the ambiguous ones are the ones that probably give the biggest bang for buck. There are some hypotheses there that that's the case, but have we done any actual study to prove it? I guess not. To be honest, we must have run a lot of campaigns, the BAU campaigns that generate a lot of revenue for us as well. These are campaigns that we already

know ... that are predictable. We run it year in, year out. We throw those leads to the channel and they know inside out what to do with it. Those probably generate a lot of value as well. So we really haven't done that study to ... but I guess maybe if you think about this way, that the ambiguous questions are where the 'blue oceans' are, where the additional value is. Because those that you already know, we probably already have a solution to it and we already have a way to solve it, and it's already generating value. The ambiguous questions are maybe areas we have not explored before. It could be higher value. It could be things I've explored and found that it's a dead end. But potentially it could be things we haven't seen before. Potentially, it could be new value we could generate.

Eric   It's more transformative?

PAR3   Yes, it's more transformative in nature. It could be.

Eric   Do you get criticised for inaccurate intelligence?

PAR3   Always.

Eric   Always? PAR1 said the reverse!

PAR3   (Laugh) Because the complaints don't float to him. Actually, I don't think it's inaccuracy per se. There's inaccuracy vs irrelevance. There's inaccuracy due to data problems. Inaccurate because of something the analyst did wrong. There are many causes to inaccuracy. If you add them all up, there's quite a lot.

Eric   Do you get criticised often?

PAR3   We do get criticised but it's not to the level where they say because of the inaccuracy, we've caused the business grievance. It's more like, "Hey, there's this gap here. Let's try to close it."

Eric   It's usually related to the way that data is handled?

PAR3   Yes, it's usually related to the way that data is handled.

Eric   Careless and oversight?

PAR3   I think the chances of carelessness is a lot less as we [the function] matured. The process has matured so much that the element of carelessness has gone down a lot. We have a lot of standard templates, we have a lot of best practices, we have a lot of standard practices, we have a lot of QA [quality assurance] processes to ensure that the carelessness is dwindled down. A very recent example - we have a campaign that's been running for many years and one of the elements that goes in is a certain scoring. And year in, year out that has been happening. Suddenly for the last couple of months, the scoring didn't happen, and it was still the same score that was for December last year. Now people start to ask why and we found out that there was a lot of dependency on data coming in before the model is scored and gets pumped into the final table which the campaign will pick. And along the way, certain processes got broken. One of the data that was supposed to

come in before the model runs was not coming in. The model still ran; there was still a score that comes out, but it was either zero or not refreshed. It's wrong. So it became, "Who's fault is it?" You can track it and say somebody upstream should have told us when the process changed and now this data comes in at a slightly different date of the month, but you can't really pin-point it down to a certain thing - yes, there are improvements that can be made, tracking that can be made, but short of crippling the whole function that down to every month I have to check this to make sure everything comes in, short of doing that, can we change it such that now we put a dependency - that the job doesn't run until that particular data is refreshed. And that takes away the chance of that incident happening. So if there's no score, we know that something has gone wrong. So, that sort of things does happen.

Eric   What about irrelevance - do you get criticised for irrelevant intelligence?

PAR3   We try to manage the expectations. The situation where the insights or the model is irrelevant is when we are trying out things for the first time. We don't know whether a certain offer would work. So we try to structure it as a test and learn opportunity. Try to structure it as a pilot opportunity. And the expectation would be that this might not be the final solution; but let's try it out. Let's not invest so many things upfront, but let's try to learn what we can from whatever we are investing in the pilot. So we try to manage the expectations from that angle. And there is a certain 'test & learn' culture.

Eric   You do it step-by-step, iteratively? Rather than run off and do your stuff and then come back?

PAR3   Yes. Whether it's because of time pressure or market pressure, the business is saying, "Hey, I'm going to do this." And the question we have is always, "How do you know it will work?"

Eric   Let me ask the question slightly differently. Do you find that the work that the Chengdu team is doing - are there cases where it's irrelevant? Because you've asked them to do something. And I'm assuming they have less opportunity to clarify. And so, do you see a higher occurrence of irrelevance when they come back to you?

PAR3   Yes, I do. They always work on the basis of what we brief them …

Eric   And there's no difference from the business briefing you …

PAR3   Yes, there's no difference from the business briefing us … but we [onshore team] do have the advantage of having some context, but they [Chengdu] don't. So theirs [Chengdu] is a pure 100% … I am going to tell you to do 'A', and hopefully you will give me 'A'. And sometimes they will come back with 'B'. Sometimes they will come back with 'C'.

Eric   Who's fault is that? Is it the briefing process?

PAR3   I think sometimes it's a mixture of everything. The briefing process carries the main bulk of it. And of course the briefing process comes down to language; understanding of language.

Eric   But I understand that the person who briefs Chengdu speaks Mandarin.

PAR3   Most of the time, they do. Yes. But sometimes we don't translate that [into Mandarin] well. We converse in daily Mandarin, but sometimes when it comes to business terms, it's slightly different. You still have to use some sort of English in there to communicate. It's not 100% Mandarin. So there will be some loss in translation. So that could be one issue. Another issue could be the skillset and knowledge of the Chengdu team. Because here ... let's say I'm going to work on a new request on contactless card, and I don't how to identify when a transaction is done by a contactless card. I have the opportunity to reach out to more senior people in the team or even directly to IT to find out how do I find a contactless card [transaction]. In Chengdu, when we brief them, we sometimes assume that ... given the volume of work, and what they know and what they don't know ... and sometimes we brief them, we are not sure whether already told them how to identify a contactless card [transaction], they might take it as "Oh, maybe this is how I interpret it as a contactless card." And that happens as well. And so that's the second category of how things might happen. The third would be - sometimes when we brief them, we think it's already clear enough if we leave the question at a certain level and they'll know what to do with it. And it's not ambiguous anymore. But to some of the analyst [in Chengdu], it might still be ambiguous. For example, sometimes we converse and say, "Hey, once we found out the top-of-wallet customer, let's do this, this, this ..." And we might have the perception that they already know what is 'top-of-wallet'. But in actual fact, they might not know.

Eric   But wouldn't you use terms that they are familiar with and have used before?

PAR3   We assume we have used it before and that they will understand. Now, the other thing about the Chengdu team is that they don't have any vertical alignment. They don't sit in our weekly meetings.

Eric   They don't necessarily have a dedicated person for each vertical?

PAR3   Yes, they work across.

Eric   And they can get confused with different terminologies and glossaries [unique to each vertical]?

PAR3   Yes. And because one of their value-add is that they are the 'buffer' [workload balancing] and we can't align them to verticals. We can't align them to a country. So that's why they work across all. And sometimes they don't have that glossary. As much as possible, we try to train them, try to send them glossaries or data dictionaries which we've built here, but it's always changing. Data is always changing. There is always that opportunity to miss that out.

Eric   So, Chengdu gets criticised for irrelevance, while you get less or never, because you have the opportunity to clarify?

PAR3   Yes.

Eric	What areas do you wish for your BI&A team to get more involved in?
PAR3	Hmm … that's a tough question. Not that we are already involved in so many things but …
Eric	Assuming resource is not the issue …
PAR3	I think today we are very entrenched in certain functions in the bank. Very entrenched. Consumer Bank is one. Started work with Great Eastern Life. Started work with Corporate Bank. Started work with our Share Trading company. But there are still a lot of functions within the bank that we think Analytics can add a lot of value. A lot. But today, we are just not there. Yet. Probably because of headcount, not because of a lack of will to do it. More from a resource perspective. So for the likes of Operations ... I think Operations is a huge area of opportunity where today we don't have any analytics there. They do their own little MIS here and there, but it's not really analytics. How many cards do I process in a month? How many rejects do I have? How many people per card? Very basic. But it's not real analytics per se. Productivity measures. So, a lot of opportunities there. A lot of opportunities in other business units - Private Banking (ORG1's Bank of Singapore) - we haven't done anything significant with them. We've started a lot of discussions in terms of how that engagement and model would work out, what kind of support they would need, what is our capability, and what's their capability, what's their pain point. We've started a lot of discussions but we haven't really embarked on that journey yet. So if you ask me, it's really that expanding the footprint ... is where we can probably do more.
Eric	You've expanded into HR, for example. And one can argue that it's a very ambiguous area. How did you decide to get started with that? How do you assign people to do work in that area knowing that most of us have no competencies in HR, in Sales Incentives? Both the business and HR people can't articulate the problems.
PAR3	Absolutely. I think HR is an interesting project. Again, we started many years ago. Because at that time, the Head of HR … it's her little 'pet project'. It was something she wanted to do. And she started on this transformational project which she called 'HR 2020'. Which is how she saw HR 15-20 years down the road. In fact, it's now 5 years down the road already. So 2020 isn't too far away. And she wanted to see Analytics being one of the cornerstones of human resource decision-making. Because today, everything is just based on intuition. And she doesn't believe that that's how business should be run. So, it more from top-down. It's her will that she wants to do it. So she's been engaging us to be able to do it. Now, why it took so long ... we probably engaged with her 3-4 years before we really came to anything. It because ... there's a few challenges. One of it is the sensitivity of accessing employee data. Very sensitive. Privacy issues. Salary issues. Second, as you said, was the maturity of the HR people in asking questions. They probably don't have that ability to ask; they are not there yet.
Eric	They [HR] is not able to provide you convergence on the ambiguity? They cannot convert ambiguity to uncertainty?

PAR3   Yes, they cannot. They know where the issue is - they say that, "Hey, I'm losing a lot of staff here. Help me solve it." But they cannot take that to the next level. They cannot break it down into smaller pieces.

Eric   They see the fire, but they have no clue where it's burning?

PAR3   Yes, they have no clue where it's burning … why it's burning. And how to even put the fire out. That's the challenge. I guess we've solved it a little bit, but we've solved the bigger data privacy challenge. We solved it by setting up the [Analytics] headcount as a HR headcount. So this guy [HR analyst] is a HR person. And is therefore entitled to see HR data. Only he can see it [from the Analytics team], and nobody else. We set up a 'firewall', a technical solution to put up that 'firewall' such that nobody else sees it [HR data]. Such that there's confirmation at least from a privacy perspective, we've address it. And he reports directly to divisional office, which then reports directly into the Head of HR. So there is some oversight on that function as well. So we addressed that. And we slowly addressed the ability of HR by running trainings. So we ran a lot of trainings. We ran a lot of 'visioning' workshops. And we helped them to lay out the roadmap of what 'baby steps' that HR can take. We did some little pilots here and there to demonstrate success. No difference from how you would start the Analytics function 'greenfield' in an organisation. Demonstrate small success. Demonstrate what are the value you can get. Then start to do the bigger pieces. Then start the longer-term data acquisition. So, the roadmap is all the same. We embark on the journey with them. And the Head of HR recognised that it was a multi-year initiative, and there are moving pieces until you see the real results. But along the way, we also defined small little successes.

Eric   Did you have your best people looking at it?

PAR3   Yes.

Eric   People who are good at handling ambiguity?

PAR3   Yes. Actually we started off … once we got the go ahead, "OK, let's start this function [vertical].", we spent more than 3 months trying to find the right person. Because the question is, "Do we hire someone with an analytics background to do it, or do we hire someone from the Hewitts [HR consultancies], someone with a HR consulting background, but have less appreciation of data?" So which is it. So we explored a lot. We interviewed a lot of people. And we eventually ended up with someone from our [existing Analytics] team. We took him out from his role and we put him in HR. For many reasons. One is that he's from a consulting background. So he would have consulting skills, he would have the ability to do internal selling. Because like it or not, for the next 3-4 years, there's a little bit of internal selling to do, within the whole HR team itself. And he has the technical skills because he was a hands-on consultant. And he has the business knowledge ask questions, but he's not HR trained. But he's been with ORG1 for a good few years, so he understands the structure, processes, culture. So that gives him a little bit of a head-start. But not necessarily that he knows HR business. So we got commitment from the divisional office that they would have someone from HR 'buddy' him, teach him the HR domain. Such that in the first year, he's not only involved in the analytics projects, he's also

involved in the HR [non-analytics] projects. He joins the HR meetings. He was involved in very HR-oriented projects; no analytics requirements. But of course in those project, he brings his analytical skillsets to it. Which makes the projects [outcomes] even better. It's been a year plus, and it's working out very well. We've progressed a lot since then. We are on the verge of coming out with our own HR data mart. We now have a consolidated dashboard that cuts across all the different HR matrix; we have one that floats up to all the division heads, all the senior HR folks. Every month. Looking at attrition, looking at hires, looking at critical skillsets, look at learnings. We now have a good pipeline of projects that we are going to work on in the next 1+ year. So a lot of progress there. And the guy has grown as well. He's no longer an analytics guy - he's a HR analytics guy. He's also done himself well; he's brought into the [HR] team.

Eric   So that's it!

Eric   Eric thanked PAR3 for this time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections. And to indicate areas which are sensitive and should not be re-produced.

PAR3   PAR3 requested Eric to share his final thesis / findings with him, as it benefits the [Analytics] industry and Eric agreed.

Person	Transcription
Eric	Eric thanked the interviewee and explained the BI&A organisation design research.
Eric	Let's start with your background and work experience.
PAR4	I have a Masters in Economics - Econometrics. About 12 years of experience in Analytics. I've worked across onshore teams and offshore teams. Grown up from being an analyst to the team leader in both these verticals. Worked only in the Consumer Banking space, but touched across all the products. In the last 12 years, I've worked across different nature of problems - as simple as MIS [reporting] to advanced analytics. So I have a broad spectrum of experience in Analytics.
Eric	Doing Campaigns?
PAR4	Campaigns, [sales] incentive planning, coding …
Eric	So all in, you've got 12 years specifically in the analytics space?
PAR4	Yes, 12 years in Analytics space only.
Eric	What does the term 'business intelligence and analytics' mean to you?
PAR4	The term means how well we understand the life of our customers, how well we are connected with our customers so that we can solution the right products and give the right advisory to them. So Analytics is about taking 5 broad steps - first, being able to sniff the patterns, being able to sniff what the customer is looking for. Second, define the problem - once we know that our sales are down because our customers are looking for something we don't offer them, ... define the problem. Why, what, is happening? Third would be to structure your solution. Fourth, leave it to the machines to answer those questions - have your hypotheses built in, pull in all the data, and let machines give out solutions. And last for Analytics, very important, time to execution. So if you do things that will take you 5 years to implement, how do you do something small - can feel and reveal at the same time. And so in my mind, doing these 5 things - by understanding the customer needs and delivering the solutions is what Analytics is. You've got to sit with the business to do that.
Eric	So the term 'BI&A' is an appropriate term?
PAR4	No. I don't think BI&A is the right term to define what we do. Because Analytics these days is quite 'bastardised'. Everybody is doing Analytics. So, to distinguish ourselves, we have to re-brand the field. Like Shakespeare said, "What's in a name?" I think it's all in the name. For the industry to

move a level up, somebody has to come up with a new term and say, "This is what it means." I don't think BI&A is right for the future.

Eric   And do you have a term in mind?

PAR4   I don't. But I think something like "Business Strategy" would be a better fit. Analytics is an offshoot of strategy and management consulting. So, something that's synonymous with strategy and yet different from what strategy used to be 10 years ago, will reposition the function for next 15 years

Eric   So … first question. Who and which function does the BI&A team report into, and why? In your current role.

PAR4   In my role, BI and Analytics are split, and they have separate reporting. So business intelligence [BI] goes into Operations & Technology. BI does a lot of data management, data warehousing …

Eric   So that's how you would define BI?

PAR4   Yes, that's how I understood BI. But Analytics vertical rolls into a separate functional head who reports into the business line. Did I mis-understand the notion of BI that you had?

Eric   Because the term, as you say, is so bastardised, some people look at database marketing and also classify that as business intelligence. Producing an MIS report on customer behaviours or portfolio behaviour, they treat it as business intelligence. So the terms are fairly loose between business intelligence and business analytics; I've chose to wrap it all up and say BI&A, as the collective of using data and information in different ways - whether to provide strategy, to produce a report, to run a campaign, database marketing ... that whole collective can be quite large. Different people in different organisations have defined it, or encapsulated it within one function or multiple functions depending how they are organised.

PAR4   So for us, all of that rolls into one functional head. This functional head oversees marketing, digital, analytics and customer experience

Eric   Why?

PAR4   Makes sense. This functional head looks after broad verticals. One is Analytics. Second is Marketing. Third is Digital Banking. Fourth is Customer Experience. If l look back at different companies [where I had worked], they've had different unit heads all reporting independently to the CEO. In that structure ... now, I'm just trying to make a reference point ... the nature of the work requires Analytics to be embedded in the business. And in that old structure, there will be territories. Analytics will be competing with Marketing, and Analytics will be competing with Businesses. So once you bring all of this under one umbrella, you kind of break those territories and work as a team. Analytics is like 'art' and 'science'. So the human body is Marketing, the brains is Analytics. So we work together and reach our customers with the best value in a timely manner. That's why I feel this

	structure has its own merits, than having it separately. So, all support functions grouped together and they work as a family.

Eric   So, does the current head of your BI&A function participates in senior management meetings?

PAR4   Yes, the current head participates in senior management meetings, and just to add - I do feel it is not enough. As in … in a very flat organisation, all lot of these decisions have already been taken before the meeting happens. So is the BI&A head very well aware of the situation before entering the meeting? Is the business [analytics] head being looked at to define the problem, or is he being looked upon to just provide data. So, how do we build that rapport to ladder up? It's very important that when we enter the senior management meeting, we are viewed as trusted partners and advisors. So it's the positioning of the business [analytics] head which matters a lot as well.

Eric   So in some sense, it is also defining what is the nature of the participation. You could simply be an observer or having authority and accountability.

PAR4   Right. The analytics head should be participative and collaborative. So, what role do we want to play in the decision-making process? Do we want to just give the data and let the decision be taken by somebody else, or do we want to lead the discussion, draw insights, propose a solution, and then help someone arrive at the decision? So the nature of the participation, as you say, is also important.

Eric   Are you satisfied with the current reporting structure of your BI&A team? And if not, how would you have constructed it differently?

PAR4   Partially satisfied. Because our functions [Analytics] are local and global. So there's a regional element to this as well. Local structure is perfect. Reporting line to the business is ok. But we do have an element of centralisation, which is a parallel organisation, and it might work if the reporting line for the centralised team is re-aligned to the local structure, rather than having a parallel organisation for your offshore. Because parts of our arms and legs are in different countries, and if they do not report into the local units, then it tends to create that friction and not being a part of that human body.

Eric   So you are saying that today, the non-local units do not have reporting lines into the local?

PAR4   Yes, as of now they don't. In a way, within the analytics unit, the reporting structure may or may not be perfect, but across support functions, I think, as of now, I mean if I look 2 years from now, the structure is perfect. It's good for the organization

Eric   Meaning having a local and a non-local set-up? Can you clarify what you mean by "2 years from now it will be good."?

PAR4   Sorry, I meant that the local organisation structure is ok. But the offshore part of it needs to be aligned to the local structure.

Eric   What do you mean by alignment?

PAR4   First and most important is the reporting line. So if I have a counter-part in the offshore country who does analytics for me … if that person doesn't report into me and reports into a parallel structure, that's not perfect. So first of all, fix the 'dotted lines' [reporting], and turn them into 'bold, solid' lines, where they are aligned to us. If at all we believe in the centralisation. That's a different question. But bring them organisationally aligned to us for a start.

Eric   More from a reporting alignment. Because there's the other alignment that talks about roles and responsibilities as well, right? But you are saying that if you fix the reporting, a lot of it will get addressed?

PAR4   Yes. Let's take a step back. We first have to first acknowledge whether centralisation works or not. Centralisation, from my experience, doesn't work. Centralization helps to reduce expenses but doesn't bring efficiency.. but if it's organization's decision to centralize then we will centralise. It's like an arranged marriage of convenience, we'll have to make it work. In order to make it work, we've got to align and re-align, and play a participative role - travel to the offshore centre, coach them train them, bring them to a local setup for 3 or 6 months, so that you harness that culture of working together and making them feel how is it to stay in the business and take on the pressure. In the end, the cost of making it work is more than what centralization saved for the organization. Add to this the cost of regulatory controls and governance

Eric   It's a very strong remark to say that centralisation does not work. I want to get deeper into this. So, centralisation has 2 components to it. There is an offshore component, but you could also centralise and not offshore. If you were to have centralisation onshore, let's say in this case, Singapore, and drive that centralisation within Singapore, would you also have said that it wouldn't work? When you talk about centralisation, in your mind, is it about the function coming together - all reporting, accountabilities coming together as one. Or does centralisation imply offshoring for you?

PAR4   "It's a bit of both. The adversity of moving the function into a different location and centralising is very high. That, in my mind, will not work! I've seen it fail miserably and I've had enough of good and bad experiences to say that it's a challenge to manage a completely offshored team. But if you were to centralise locally, part of the problems can be solved, but even then ... let's say I look at the Cards business or the Retail [Banking] business, or Wealth Management business - they do have mini-analytics shops within, which are necessary for them to take day-to-day decisions. So they [mini-analytics shops] process numbers, they do gather data when they talk to customers and infer on that. Let's say that all of that was to be centralised onshore, then you need systems and technology to support that to gather data in real-time. If all those enablers are not in place, the Analytics team would end up spending a lot of time in consolidating these inputs which are today self-managed by those respective units. So we may end up collecting data, we may end up being looked at, ""OK, you give me MIS A, you give me MIS B."" [The centralisation] is an ideal state but very very difficult to implement. One can still centralise some parts of it - for example, your sales incentive planning - we can do that. For example, when you launch a new product, we can bring the units together and do the data crunching which would have earlier

happened in those respective units. So some of that can be centralised naturally. We have to be selective, otherwise, analytics team won't have time for inquisitive analytics and would be branded as data providers who also do descriptive and predictive analytics. One can't centralize everything. For those activities which we can't centralize, partner with businesses, help the stakeholders and clearly define the boundaries. "

Eric   So if I may paraphrase a little - you are suggesting that with centralisation, although in the back of the management's mind of wanting to drive higher efficiencies with centralisation, or maybe even to strengthen the political power of the function, but what you are saying is that actually centralisation may in fact lead to the function becoming more of a utility function, and in fact, diminish the political standing of the function?

PAR4   Yes. And I've seen that happen. I've seen those … I've seen some of those perceptions being precipitated. I'm sensing folks have started viewing us as data providers. … functions where they can go and ask for data but once the data is given to them as an MIS, they are happy to take decisions themselves. So by doing that, we may be cutting ourselves from those business tranches where we used to sit in the past

Eric   You've had direct experience where your BI&A team was much more decentralised; embedded with the business in the past. And over the last few years, it has now taken on a more centralised shape. And you've seen that evolution. And you've seen the change in the nature of the work that you get involved in. And you're speaking from that [perspective], to say that it's now more a utility function vs a decision-making function?

PAR4   Yes, that's true. [It's now more a utility function.] And the challenge … the root cause is that when we offshored the analytics activities, the business knowledge, the relevance, the understanding, the know-how of assimilating the information, remained locally. All these centralised units, can give you a solution, but they won't know how and when to quickly deploy that. So you would still need the local teams to, in a way, deliver. But there are too many overheads to kind-of fit the units together.

Eric   So what are the lines of business that your analytics team supports? Purely only consumer [banking]?

PAR4   Only consumer. We have 2 kinds of projects. Ones which originates from frontline business like Cards & Retail. Others, are where we collaborate with Finance. Marketing, or risk teams

Eric   In terms of the lines of business, they are really just product lines?

PAR4   Yes.

Eric   Do you support Operations for example? Support Risk and Credit?

PAR4   We support Operations a bit. We don't support Risk and Credit for customer analytics.

Eric	You use the term 'customer analytics'. So the analytics is all in the space of customers? If it's not customer-related?
PAR4	For any organization, blending customer analytics with qualitative data is an ideal state … ok, let's say the non-customer analytics would be … we do a lot of market research and insights. We do a lot of investments in machine learning and innovations Those are not part of the current business structure because of their nature and return on investments.
Eric	So you don't get into the space of Market Research? That's a separate team?
PAR4	It's a separate team from analytics but reporting into same business head as the analytics head
Eric	They don't use the same analytical methodologies?
PAR4	They don't.
Eric	Can you describe how your analytics team is currently organised? What is the size of the team? Do they have sub-divisions? Do they have separation of work, roles and responsibilities?
PAR4	Our function has about 20 onshore analysts. We are organised by the nature of work- Customer analytics, campaign management, MIS and Incentive Planning. Within each of these structures, we mirror the organisation of the business. For example, the Business Analytics would have an analyst for Cards, one for Retail. For Cards, we'll have for onboarding and sales engagement.
Eric	So even for Campaigns, you would have people who support Cards vs Retail. And MIS, you would have people who support Cards vs Retail?
PAR4	Yes.
Eric	It's a 2-stage split?
PAR4	Yes.
Eric	And their roles and responsibilities? So if you say a person in Campaign or MIS, what would typically be their roles and responsibilities?
PAR4	The roles and responsibilities tie back to the … I would say, the 'circle of life'. The first step in any analytics problem is to look at the data end-to-end; that's MIS. So this person draws the data from the warehouse, understands the pattern, diagnose the problem, and feeds it up to the [business] analyst who will do further deep dives to understand what is happening, why is it happening, define the problem. So the first team is MIS, the second is [Business] Analytics. And then test your hypotheses. Do experimental design, test and controls, to test the hypotheses in the market That's all done in the Business Analytics [team]. After that, once the results are out, grab the campaigns, see what tests have worked, what tests have not worked, and then pass it back to the MIS. It's the 'circle of life' - MIS, Analysis, Test & Learn, Campaigns, Tracking, and then it goes all the way back.

Eric	And this team that you have locally, are they all seated together? Or are they seated with the business in different local locations?
PAR4	They are all seated together. For us, our business, they are on the same floor, in the same tower with us. But we do encourage 'hot desking', so once a day, in a week, we encourage our analysts to sit down with the business, next to them, work with their partners, just feel their pressures, and get ingrained in their culture.
Eric	Is this a formal arrangement?
PAR4	It's informal. Analyst to analyst level.
Eric	And would you prefer that they spend most of their time seated with the business or seated together, analysts across Cards and Retail?
PAR4	I would say I want the analysts to sit together and not with the business. It's the 80/20 rule. 20% time should be spent with the business, 80% time with fellow analysts. Reason being that once you're with the business, you get drawn into a lot of things of a fire-fighting nature. Analysts do need some time to think, to get that creative aspect. So staying away from a fire drill would give them the time to think of a problem and approach it differently. I've seen some banks who have that structure where the analysts sit with the business units and they may end up being taking instructions from the business for all the things; they may lose out on the other kinds of analysis that happens in a creative unit. There is a merit - 20% time sit in the trench, and then 80% time ...
Eric	But not the other way around - 80% time sit with the business?
PAR4	Sitting away, but yet you should be involved in the business 80% of the time. You've got to think like the business. You've got to understand what their challenges are, what their problems are. So 80% you've got to understand them, but you've got to sit away. Not sitting next to each other, but sit on a different floor. Be available 80% of the time, through phone calls or messages, go and talk to them. You've got to be available, be a part of their time, but stay away so as not to be pulled into their fire-fighting.
Eric	Physically they may not be seated together but there's a lot of face-time with the business?
PAR4	Yes
Eric	The face-time is important? If there was no face-time with the business, that would be an issue?
PAR4	Big issue. So 'co-location'. We've got to be in the same building. Some banks have 2 offices - one in Changi and one in CBD. Even that won't work. Because by doing that [analytics and business sitting in different locations], you've actually cut off your analytics into a different location (sending a strong message that analytics is not as important as business). So you've got to sit in the same building so that the perception builds up that we sit in the

head office together with our business. So once you have broken that perception, which ever floor you are in, as long as you are available on a phone call, and you can sit and work like colleagues ...

Eric   It's this notion of being physically available that's important? So being in the same building allows for this physical availability?

PAR4   Yes, it just breaks that perception. And it builds an aura that you are sitting in the head office and it means your function is as important as theirs. So you are considered valuable.

Eric   Could you describe a little bit about the backgrounds, competencies and work experiences of the team?

PAR4   Our folks have Masters in Mathematics, Statistics, Economics. We do have people who come in as a Bachelor, a general degree, and they pursue their Masters while they're on the job. We hire from diverse backgrounds - a lot of local universities have specialised subjects in analytics, with prior experience in SAS; so we bring them into a structured training program and graduate them into the courses within the industry as well. We hire quite broadly from the market.

Eric   And most of them would have prior experience in analytics? And if they do, they also define analytics in the same way that you define it?

PAR4   Most of them have prior experience in analytics, but I've seen that once they come in, their understanding can be very very different from the way we have it. Our function is still very conventional in customer analytics. Because there are very few people who 'peel the onion' layer by layer today. The new generation wants to use graphical interface; the older generation still wants to program [code]. So there is a difference; we are dealing with a different generation; the industry is moving faster. We help them but we learn a lot from them as well.

Eric   What kind of business problems does you team work on?

PAR4   A lot of our solutioning these days are on designing new products. Let's say you want to launch a card product. What's the target segment we are going after? What should be the product features? How should those cards be properly bundled across different banking products. That's one. Second is 'Perceptual Scale'. We have a tie up with petrol stations - which side of the road should we tie up with? How should we replenish our ATMs across the networks - should we give 5 '$10 notes' or 1 '$50 note'? Again, every problem would have an analytics angle to it - you can answer it simplistically, or you can see the analytics in it.

Eric   Would you say that the problems today are largely of an ambiguous nature, which means that there's room for multiple interpretations, or are they quite explicit in the problem statement? For example, an explicit [problem] statement may be, "I need to reduce the physical number of dollar notes in the ATM because my slots can only take an X number of physical notes. And therefore, if I can only put in say 500 pieces of [dollar] notes, I want to know what mix of '$10s', '$50s' or '$100s'. And that's a very explicit

Operations Research type problem vs saying, "If I have to refill my ATM, what is the customer experience like? If I give a '$100' [note], does it change the way he spends and comes back to draw cash again; he changes his behaviour vs if I gave him '$50' [note].

PAR4   To answer your question … I've seen the function evolved … and I've seen 2 business cycles at least. These days, the problems are given to us in a very defined manner - as you said, "I want to [maximise] the slots of the ATM." I'm not sure the folks who deliver the problem statements to us, they have thought that deeply. Which is why the organisation structure we have now, because we work together with different functions, we now have to get into that dialogue with our partners to educate them and learn together that there are other aspects to the problems which have not yet been thought through in detail when the problem was given to us. So, linking it back to the kind of talent [in analytics], we have analysts who will jump into the problem straight away and do a good job in answering the questions, but once that solution is presented to seniors, it will be shot down - "Have you thought about the customer experience aspect, have you thought about these ambiguous aspects of the problem?" And then the analysis would be termed as 'incomplete' or 'insufficient'. Which is why a lot of problems today are complex, they are given to us to solve in a very simplistic manner, but we get into a lot of discussion on the latter side of it as well.

Eric   The ATM problem is one example but there are other instances where the problem statement has already been pre-defined. You present it to management and management says, "Have you looked at the other auxiliary parts of the larger construct." What prevents your analytic team today to already been able to anticipate that, prior to presenting it to management?

PAR4   It's the time [constraint]. Because the teams are leaner. The problems are as complex as they were 4 years back, but we don't have resources to solve that. Our analyst can think through that; they have the ability. But they don't have the time to deliver that. The offshored resources don't understand the problem in that sense. Which is why if you give an analyst the same amount of time and resources to solve that problem, yes, he will definitely think through it.

Eric   But is it necessarily time? If there was no offshoring … I'm assuming the offshoring plus the onshoring … the physical headcount has remained fairly consistent?

PAR4   Yes.

Eric   It's just the mix of whether it's onshore or offshore. If all of that total headcount was instead placed onshore, would that have increased the 'time' available or the ability to therefore have solved the larger problem construct that are more ambiguous, prior to management presentation?

PAR4   Yes, definitely. Let's say we used to have 3 folks supporting the Cards business. Now one of them sits in an 'offshore' location in the same country, one sits in an offshore location in a different country, and one sits in the head office. This person who sits in the head office is giving 80% of his time as face-time to the business. He understands the nature of the problem. He will

be able to think through the auxiliary parts of the problem. The other 2 will not. So 2/3 of the team doesn't understand ... won't be able to think deep. It's only 1 person who would have to train the 2 first of the auxiliary parts, and if we have let's say a week to solve the problem, it will only be one guy working on it. Whereas in the older model, all 3 would come together and contribute and attend to the problem better.

Eric   Is the problem therefore more about a transmission of knowledge, within the BI&A team, as opposed to with the business? Now you've got many parties, whether onshore or offshore, seated at different locations. The ability to take that one-person meeting with the business and face-time ... is it a question that there is not structured way to transmit knowledge across the different locations?

PAR4   Yes, I would say that. If it's the same guy who rotates in these 3 locations, like a consultant who is onsite at different points in time, then yes, we can probably bridge this lack of transmission [problem], and add value.

Eric   If I'm the guy with the 80% face-time with the business, and my other 2 colleagues are located elsewhere - they can be in the same country or outside, but they are not with me. I can always use a conference call. I can lead it because I have that face-time. Or I could use a video conferencing facility. What prevents you from doing that?

PAR4   It may work for the first 6 to 7 months. But over a period of time, we will start to experience a significant gap in their understanding of business and local market- so you try to explain that to the other person, but he/she won't understand. They won't understand the culture because they are so far away. They won't understand why customer experience is as important because they haven't seen customer complaints, they won't have heard about the nature of customer complaints that have come in. They will become more solution-oriented - just give an analytical solution and move on- "Ok, let's solve the problem in an optimisation way or whichever." But they would not be able to think like a local customer.

Eric   You are suggesting, therefore, that when you have these teleconference or videoconference calls, actually there's a lot of conversation that the person who's had the face-time with the business … there's a lot of informal conversation that's happening which may or may not be directly related to any problems at hand, but because they are meeting all the time, these informal conversations are material to creating context to business problems?

PAR4   Yes, yes. That's right. And by being a part of that informal circle of influence, sometimes the folks sitting in head office, they do have an upper hand - in negotiating extra time, in selling or marketing the analysis better. Because of the credibility; because you've already broken the ice at the party. That's where it helps. And therefore, they are able to solution better.

Eric   You mentioned in the past that it [the BI&A team] was less centralised, that the team had higher ability to deal with much more ambiguous types of problems, or they could solve the auxiliary constructs, and now with the centralisation, it's reduced. In the past, was there a prescribed set of activities

that allows you to deal with these sorts of ambiguous questions? Was there a procedure that the team would have adopted? And if so, could that procedure not have been continued despite the centralisation?

PAR4   Procedures existed in the past. They do exist even today. Putting it into context - let's say you were to launch a campaign. Day 0 - initiate a conversation with the business. Day 5 - go back with the preliminary analysis. Day 10 - finalise the planning. And Day 15 - roll out the campaign. We used to have many sub-procedures as well. But what we also used to have back then were those 'break-out' times where teams used to collaborate and think of innovations. Open-ended problems. Let's say Friday evenings, 2 hours, talk about how you would do the same thing differently, and talk about causalities - for example, cards to CASA (checking/savings accounts) cross-sell, which one of these sides are important - should we cross-sell cards or CASA? It's throwing intellectually stimulating problems to the analysts to keep their creative thinking going. And since all the analysts are sitting in the same location, you can bring the team together and create that environment of ... intelligence.

Eric   Like an innovation lab?

PAR4   Like an innovation lab. But now if the lab is split into 3 different locations, you are kind of localising the cultures, you are doing away with diversity. I'm sure all the units have reporting lines that are parallel, so they have their own way of running their mini-breakout zones. And by having these mini-breakout zones, they are distancing themselves even more. Because breakout zone at head office vs in-country 'offshore' unit vs offshore unit could be very different; they could be differently run. I think even if you do it over video conferencing, you've got to 'smell' each other at some point, deal with each other. You cannot differentiate a warm handshake or a hug vs a nice hello with a smile over the video. So you've got to break the barriers which I think these enablers [video conferencing] are missing.

Eric   Is it a question of trust?

PAR4   Yes.

Eric   So the more distance it is, the less trust there is?

PAR4   Yes.

Eric   How do you define and measure success of your BI&A team?

PAR4   In my mind, it's a call from a business head saying, "Good job!" When you loop into a business head after delivering a project, you can look into his eyes and know you've done a good job.

Eric   But what is a good job?

PAR4   Thing which, at the end of the day, brings value, in terms of dollars. Green dollars to the bank, or any function. So if a project has added that value, then yes, we feel great about it. Now the value could come in the form of revenue or reduced expense. Or if you get a positive customer experience from the

actions you have taken, measurable through NPS, etc. so that yes, it makes sense. So to me, yes, both are important. And you can feel it when you talk to your ...

Eric   Do you or the team get criticised for inaccurate intelligence?

PAR4   Incomplete intelligence, yes. Inaccurate … the instances are very few. When we make mistakes … we are all human, we do errors at some time. But yes, we get criticised a lot for incomplete analysis.

Eric   So 'incomplete' meaning 'irrelevant'? Or partially relevant?

PAR4   Not 'irrelevant', I would say. We still do relevant … but we are, yes, criticised for 'analysis paralysis' because once we get into that mode of doing analysis again and again, and then at some stage it tends to become irrelevant. Because you've thought through it so deep that you are just answering the question. But it's no longer relevant anymore.

Eric   Not value-adding?

PAR4   Not value-adding. It's like 'analysis paralysis'.

Eric   So how has the change in centralisation/decentralisation contributed to this incompleteness of analysis? Do you see a higher occurrence of partially relevant or incomplete work with centralisation?

PAR4   It [centralisation] does have a role to play. I have seen some projects where the centralised team will solution some recommendations, using card transactions for example where they won't be able to explain anything beyond statistics. How to use that tool? The tool is there but it may not be usable at all because the problem is not value-adding. And that's where sometimes we are challenged as "Why are you doing that when the problem is very different and could be solved simplistically?" Yes, the relevance has gone down.

Eric   So even over the last few years, you've had a depletion of talent because of this restructuring or centralisation. Is it more the loss of talent that causing this rather than the organisation design structure itself?

PAR4   They are both inter-connected. Because when the organisation restructures in this manner, and a smart analyst is now told that we are getting someone to do 40% of your work so that you can focus on the other 60% … you know, you can't split an analyst as 40 and 60 because the creativity comes bundled. This analyst will resign, centralization will start with 40% and quality of rest of the 60% will go down

Eric   What areas do you wish for your analytics team to be more involved in?

PAR4   I go back to your earlier comments on customer analytics. I think 'customer analytics' is a way of doing things 10 years ago. Like you and I are talking right now. I'm sure there are cameras around us. They are looking at us while we're talking. This is a data feed; sitting some other place. Now, it may not be relevant for the institution I work with, but case in point, there are so

many other data elements outside of our customer which tells a lot about that client. And if we can assimilate all of that, generalise, then the customer data and analytics only become 5-10% of that entire data stream that is relevant for a problem. So, how do we assimilate the relevant data structures together, put it as an intermediary, and then 'spy around' - "I know more about you even before you came to talk to me as a customer." So, I wish we were spending time in that zone. I wish we had the right technologies in place which can assimilate the data so that we can take informed decisions - right now, our analysis starts after 80% of the information has already been lost in transition. We are too late in the game as an industry.

Eric   Where would you say your analytics team today creates the most impact?

PAR4   As in?

Eric   In the way you define success - "Good job! You've created value." So in what areas, or what types of problem domains where you feel that your current analytics team today earns that kind of accolade - every time they do it, they say, "Good job! Good job!" They are very good at it.

PAR4   No.

Eric   You don't have?

PAR4   No, we do have some examples, like we've launched some new products recently - so they are doing very well. So we do get recognised for that. Product design and structuring is where we are stepping in. We are stepping in defining single-thread logistic models - that has been our core strength. Who to offer a balcon [balance transfer], who to offer a savings account, who should we reach out to for fresh funds. These are things I think we do very well.

Eric   Within the marketing targeting domain?

PAR4   That remains our competency. We are recognised for that.

Eric   If you had to build this analytics team from scratch, assuming you are not constrained by politics, organisation, headcount, expense, how would you have designed it differently?

PAR4   I go back to my earlier comment. I would give it a thought to how to name my analytics team. For lack of words at this point, I would call it, I would say, a 'strategy function'. Let's say, 'strategy'. 'Business Strategy' or whatever. In that, I would like to consolidate some key units which make decisions, and deliver that final analytics product. One would be Analytics. Second would be Marketing. Third Customer Experience. In a way, these 3 are relevant. So, Analytics, Marketing and Customer Experience.

Eric   All within the same unit?

PAR4   All within the same unit so that Strategy has strategy for customer experience, marketing and analytics. Now, Marketing, the way I call Marketing, would be more of creative designing, which works with agencies

to see what sort of advertisement … it's like delivering the final intent - red, blue and shades. Customer Experience would be talking to the customer, kind of receiving complaints and addressing the problems. Everything else sits under the Analytics function. So, 6 units within Analytics, structuring such a way - first, data, systems and technology. You need a smart data infrastructure which can absorb these non-customer data elements together, a system should be designed in a way so that problems can be solution the way it should be. The second structure, within the Analytics, is Business Planning. This goes back to the earlier point - a lot of business planning happens within Finance, Cards business and Retail business. This unit [Business Planning] would work with each of the units to help them in the business planning for the goals - we'll manage the financial aspects, do the P&L, and kind of do that processing. The third unit would be repeatable processes - MIS or Campaigns. Now, it is a reality that the function would be offshored, however much we may hate it. Offshoring is a reality. But these 2 units - MIS and Campaigns, are repeatable in nature. So whether we offshore them to the same country different location or to a different country, those things can be thought about later. But the nature of the work is repeatable and that's why it can be separated. The fifth one is where we do open-ended ambiguous problem-solving. So this is the unit which does a lot more creative thinking. The last is the Innovation Lab. So, Innovation Lab would work with universities and analytics institutes outside like SMU or CMU. So these are the people who represent the organization and bring that external research in to custom-solution, which none of these earlier units would have had time to think of. You can of course staff them differently, you don't need to have 80% of the resources in Innovation, but then this Innovation person would off and on sit with all the 4 teams as a core group so that he can bring that external influence to do things better and take it. So that's why these 6 functions would work together.

Eric   What about Marketing Research?

PAR4   Yup sorry, Marketing Research. So definitely. I had it. Marketing Research would sit under Business Analytics.

Eric   Not under Marketing?

PAR4   No. Marketing should be focussed on getting the content and creatively delivering that to the world. But the research, the focus groups surveys, they all sit under the Business Analytics leg of the Analytics team. So that's where I would structure it differently.

Eric   Ok, that's very good. That's basically all the questions I have.

Eric   Eric thanked the interviewee for this time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections. And to indicate areas which are sensitive and should not be re-produced.

Additional questions emailed and received on Mar 11, 2017

Eric	What are the performance goals (i.e. for performance appraisal / annual performance scorecard) that your Analytics function carry?
PAR4	1) Each of the country businesses have must win battles for the year. Our analytics function is an integral part of the business and our performance goals are therefore aligned with their must win battles. For example, if the issuing sales target is +10%, then our goals will be measurable and time bound along the following lines: Contribute 20% of the business goals through each of the following activities – A) data: set up an automated data layer and standardize data generation process for usage marketing campaigns. The data should be available timely and accurately for all marketing campaigns. B) targeting: develop a targeting framework having a need based customer segmentation and share of wallet assessment for existing customers. C) offers: develop a merchant recommendation engine based on spend behaviour of our existing customers. D) profitability: simulate marketing offers to customize best profitable options for the customers. E) testing: design an optimal media strategy for EDM, SMS, Facebook custom audience, google display network and telesales. Create a test design framework to roll out the marketing offers across all channel. F) instant: create real time decision rules and daily tracking dashboard to monitor success. G) tracking: develop performance curves to learn from a/b testing and feedback for future campaigns.
Eric	Do you feel that these performance goals are aligned to your Analytics function's capabilities?
PAR4	No. Our goals are not always aligned to our analytical capabilities because we prefer to keep a room to stretch a bit and innovate. E.g.: as above, pushing data to Facebook custom audience requires knowledge of SHA hashing. This keeps up the challenge and makes our work exciting. This also motivates the analysts as they get to learn new skills on the job
Eric	On what processes does your Analytics function have approval authority on?
PAR4	Our analytics function has approval authority on strategic decision marking with respect to attribution of marketing dollars, product launches, CVP enhancements, strategic decision on business operations, merchant partnerships, marketing segmentation, propensity models and data governance processes.
Eric	On what processes must your Analytics function be consulted on or provide it's concurrence?
PAR4	Our analytics functions should be consulted by senior managers (C suite, business heads and above) to solve for "why" and "so what" in their everyday decision making process. This should be limited to product management, portfolio management, marketing, digital, finance and P&L management. E.g.: what are the most significant business drivers? How to generate a consistent stream of revenue for the business? why is the reward

cost increasing and what should be done to bring it down without affecting sales? What is the right combination of card bundle and how many of them should we sell to a customer at acquisition? How should we profitably grow our deposit books? What's the right time to sell investment or insurance to customers? How much should be pay to our bankers to optimize SIPS payout and effort based revenue? For the same dollar of revenue, should I pay more to customers or their sales representative?

Eric   Does your Analytics function own any policies?

PAR4   No.

Eric   Is your Analytics function formally consulted on all business initiatives that require data?

PAR4   No.

Person	Transcription

Person   **Transcription**

Eric   Eric thanked PAR5 and explained the BI&A organisation design research.

Eric   Can you briefly tell me about your background and experience?

PAR5   I have spent more than 20 years - all in the financial services sector. Banking, Insurance, Consumer Finance, Re-Insurance. I joined GE Capital in India as part of their set-up of GE Capital India business. Then I was part of the set-up of the first outsourcing business by GE Capital, which was called GECIS [GE Capital International Services] and now called Genpact in India. This was the largest outsource ... this was the start of the global outsourcing to India. Globally. Because GE put scale behind it. Then I moved to UK as part of Acquisition Integration, Six-Sigma ... so my background is Economics and MBA in Finance. And I'm a Six-Sigma master blackbelt certified. GE was already into Six-Sigma, so this was my initiation into Statistics in a big way. Then I've done a host of stuff mainly on the business side, from Acquisition Integration to CMO to Pricing to running Productivity Councils, and then Actuarial work for GE's re-insurance team. I used to head the global pricing with a lot of actuarists reporting into me. And then we set up a team in India to create Actuarial talent from students. The goal was ... actuarial talent in Europe and US was very limited; youngsters were not going into it ...

Eric   But the jobs are not many.

PAR5   Yes, the jobs are not many, but it's highly specialised. The actuarist has to sign off on everything on pricing. So our current actuarists were over-loaded, and there was no distinction between low-end work, preparation work, thinking work … it was all together. So we set up a team between Risk and Actuarial in India of 120 people - they were students basically, and we helped them go through an actuarial program. In India, actuarial science has been decimated because insurance companies had been nationalised. It was only in early 2000 that they started to recognise, with the new insurance companies coming in, the value of actuarial [science]. When we set up the team, we had 120 people, and we were helping them through the actuarial exam process. Then I went back to GE's consumer business in Europe to run strategic marketing. Strategic Marketing includes Marketing Analytics, the Customer Experience piece and also what we call Brand Segmentation Differentiation - how do you target? Because GE was not so much a universal play. They used to target a segment and then really fine-tune what we did for that segment rather than be everything for everyone. Even on the Marketing side, Analytics and Segmentation and Behaviour-based Segments ... a lot of database approach ... used to come into "How do we target?", "Who do we target?", "What are we looking for?" Then I moved to Asia in 2007. I did Strategic Marketing for GE in Asia. I then took on a CMO role for Singapore, and then ran the unsecured business in Singapore which had

everything - the Sales team, the Analytics team, the CRM team, the entire. It was a P&L role. Very successful. Small business but very very profitable. Then GE got out of all the Capital businesses and I was part of the team which got sold.

Eric   When you say GE Capital, you mean GE Money?

PAR5   This last one was GE Money. The others were part of … there was GE Insurance which was part of the overall GE Capital business. Strategic Marketing in Europe was GE Money. GE Money in Europe was in 23-24 countries, largely made up of acquisition. At its peak, it used to make a net income of USD 2billion in Europe. It was a pretty sizeable business especially in comparison with an Asia context.

PAR5   So GE Money sold that business into StanChart [Standard Chartered Bank], and so I move to StanChart to integrate the business. Then took a role in StanChart doing pricing, cross-sell …

Eric   You must have been bored out of your mind!

PAR5   It was one of those things. It wasn't what I was planning to do. Stuck around [StanChart] for some time and then moved. I took a leap to the other side - I went to IBM for a year. I was part of the Banking Centre of Excellence; basically helping their [IBM] team sell to banks. Based in Singapore but an ASEAN role. Focus on providing solutions and having those discussions on the business side. Focus on Analytics, Customer Experience, and those [similar] areas. Got a bit of a technology flavour especially from the other side. And then I got a call from ORG4. The role was a perfect fit. I've done Customer Experience, I've done Strategic Marketing, I've done Analytics, so it was bringing it all together. So I've been with ORG4 for 18 months now and it's been a good journey. Very broad-based.

Eric   That's very useful. You get to see it from both ends. You've ran a business P&L that requires Analytics to support it, and now you are on the other end trying to convince the value of Analytics.

PAR5   That helps in the perspective of where you should focus and where you can provide value. I'm not a technical guy on the Analytics. I understand the depth of it, I'm not a hands-on technical guy. And when I was reading on Actuarial [science], it was the toughest thing - you get 5 actuarist in a room and they can't decide anything on the same topic. So one of the things we did in GE was created a global pricing methodology because otherwise, every actuarist had their own pricing methodology and there was zero consistency. And there was no idea whether you were pricing up or pricing down - these were re-insurance contracts; you could change some of terms and you might think you are pricing up, but you were actually pricing down because your exposure had increased dramatically. And other than the actuarists, no one else would have the depth of understanding to that. So one of the first thing I had done was I got all the global senior actuarists together in a room for almost 5 days to get them to agree on what are the 8 or 9 elements of price, what do they define, what are the boundaries within which you should play. And it took like 5 days, almost to the stage where you would not get out of the room until you get an agreement!

Eric	And so it becomes a sort of a 'playbook'?
PAR5	Yes, it becomes a 'playbook'. And then we actually implemented a global system to track it across the board. It was called the global underwriting system. The actuarist still had all the flexibility to do what they were, but at least it was rolling up. So we had the ability on a daily basis in 2002 to see the price lifts, ups and downs, versus exposure, at a global level, down to contract level. So, that was very interesting. It was one of those things where to be able to drive and facilitate all the discussions, you needed to know enough. You need to know the price drivers, the non-price drivers. You need to know exposures. When I joined the re-insurance business, I didn't even know what re-insurance was!
Eric	Yes, the common man on the street doesn't even realise that the bulk of insurance is re-insured.
PAR5	Yes. It was 'life [insurance]' play, 'non-life [insurance]' play, all of that. In that way, GE Capital was very good for my career. It always challenged me to do different things. Expect you to have a fast learning curve. I moved from India, I was part of a start-up, I move to another business. You kept moving up and you kept challenging ourselves in terms of learning. Which is good!
Eric	What does BI&A mean to you? I'm using this term Business Intelligence & Analytics collectively.
PAR5	So does Business Intelligence mean Reporting as well?
Eric	That's interesting. So that's exactly the question. What does it mean to you? For some people, they clearly separate the BI as reporting and the 'A' part is the datamining, the scoring. In the literature, it's actually not defined.
PAR5	In my mind, everything that I look at is from the perspective of solving business problems. Both BI and data is there to help solve business problems; to help make a decision. Eventually it is about helping to make a decision. Whether it's a report or a deep analysis or it's a model, it needs to help business make a decision. So starting with that ... so to me, the top of the pyramid is what decisions you are trying to make. At the bottom, first is the data architecture - this is a piece that needs to be part of BI; it's largely in the technology space right now. The problem with it being in the technology space and BI people not owning this is they [technology] build it from an efficiency standpoint and not from an ease of usage and "what is it that you want to do". So eventually what people do is, you have a datawarehouse platform, the BI teams pull raw data into SAS, all the processing into SAS and then ...
Eric	A lot of intermediary steps?
PAR5	A lot of intermediary steps. It's ok when you do it in the discovery phase, but to do it for things that you are churning out regularly, there, transparency, ease, efficiency becomes important. So this is data architecture [referring to drawn diagram]. Then I look at what's called 'Reporting', or Business

Intelligence, which is a better word for it. How do we make it available so that whatever decisions people are making is part of this? And how do we automate it, self-help. Then [we move to] what I call 'value-add analysis'. Which is saying, "my credit card sales are down 10% this month. What's happening?" Why, what's happening, what's driving it? Those are the things where the focus should be on analysis, how do you figure out and what do you do. More discovery and more trying to solve the problem in terms of first understanding and then seeing what do we do about it. So it's both discovery and what do we do about it.

Eric   Recommendations?

PAR5   Yah. Then up the chain is really about, what I would call, 'modelling' or 'experimentation'. From your discovery, it should either lead to a modelling or an experiment. This is what you were talking about - the 'uncertain' problem. The only way to solve an uncertain problem, in my mind, is to experiment. You have to test it with the real customers. On a small scale, pilot basis, to see whether it really works, whether you've got it or not. Even if you solve it analytically, you still might not ...

Eric   You might not have the full picture?

PAR5   Yes, and it might not resolve to what it is. And then, the last piece, at least in ORG4, that we are driving to is … one of the things we really want to do is contextual interactions. Which is really bringing in the customer experience part of it. There are some things which are more decision-oriented here, the other is, from a customer standpoint, what do we want to do? We want to make sure that every interaction that we have with the customer is more relevant and more useful for the customer. And therefore, Analytics needs to drive that. How do you know you're relevant? Take credit card for example. Credit card is probably where BI&A is used the most in the consumer bank. And Amex [American Express] is a big company that uses it. Every morning, I get an email from Amex with 4 or 5 offers on that email. Every morning. I've been an Amex customer 8, 9, maybe more years. I have not had anything of relevance in that 8 or 9 years.

Eric   But Amex claims they are very smart.

PAR5   They should know almost everything about me. If nothing else, they should know where I spend. So don't send me things that are in the West Coast when I am staying in the East Coast. We have tons of data, but do we make sure that when we are interacting, it could be as simple as ... In the Wealth business, RM [Relationship Manager] churn is a part of life. When an RM churns, a new RM comes in, and has to build rapport with the customers. We have tons of data about the customer. But the old RMs will never put in notes about the customers. But we have tons of data from the credit card - what are their favourite restaurants, what locations do they use the card at, which countries have they visited.

Eric   And people are habitual.

PAR5   People are habitual. Whether somebody likes golf, you would know from his credit card spend. So how do we bring that information in and present it to

the [new] RMs, so that they can build that conversation and rapport much easier. It's impossible for an RM who manages 250-300 customers to know all the customers. They would know 20 customers well. But how do you use technology and analytics to build that 'insights engine'? So all of that is in the realm of improving the customer experience. How do we bring all of this?

Eric   But what's preventing ORG4 or Amex from doing that? Clearly, what you said is so logical?

PAR5   So what is preventing is really starting from here - the data architecture. The data is not structured in the right way. We need to create, what I call, re-usable 'data assets'. An example of a re-usable data asset is 'location'. You create an asset for location which has varying degrees of probability - a location trajectory of an individual. If you have more data, you can be more accurate. But you need to create that data asset such that any use case can leverage it. The idea is that that whole layer of data asset, which is somewhere here [points to diagram], in most banks, have been missing. Because what they do is they do a point solution. I have a problem, I go solve it, but we don't look at how other problems could leverage it. So what we are looking to do is ... we've started the journey, it's not easy because the data needs to be cleaned up, everything needs to be done, but that's what we are trying to create is re-usable data assets. Because that's what will give us competitive advantage. Because with re-usable data assets, we can do things ... we can do these experiments much much faster. So if I have a data asset on 'location', I have a data asset on 'preference' - what kind of cuisines you like, what kind of shops you visit; I have a data asset on 'network', I have a data asset on 'social'. So, 'network' is who you are connected with - joint accounts. Who do you make a payment to? Who you receive payments from. So you can build a strength of the network and see who are the influencers and who are not. So when you are trying to do any business problem here, you can see which of these [data assets] or a combination of these can help. So for us, a lot of this is working with partners - e.g. for 'social', we are working with SMU [Singapore Management University], 'location' is A-Star, this one is with a couple of other partners. The goal is keep creating these data assets. And we are running at least 20-30 experiments - test & learn campaigns. Which is using these data assets to control, validating whether it works or doesn't work ... 60% work, 40% don't work [say]. But that's part of the learning. That's really helping us fine-tune and helping us continue to build that ...

Eric   In fact, if it doesn't work, it's even better. Because when you propose it, intuitively you think it should work.

PAR5   Yes!

Eric   And when it doesn't, it's a huge learning.

PAR5   My goal with ORG4 on the Analytics space is to create this rapid experimentation and a rapid mindset … you will never know until you try. But what we need to do - our data architecture has to be robust, our reporting has to be self-help. Today, my team spends 80% of the time doing reporting. To me, reporting is a necessary evil, but it can be automated.

Eric   It's not value adding by adding more people.

PAR5   Most of the reports have been built over time, new requests keep coming in, nothing old gets dropped off, you are always adding and adding, to a point where my brain cannot comprehend more than 2 pages. When somebody gives me a sheet which has lines and lines, and columns and columns, I'm like, "Sorry, I can't understand it." So we are re-thinking how we are doing reporting. My team in Singapore does at least 1,000 reports a month. My guts say that more than 70% of them are not looked at. There's a lot of overlap. So what we are doing is we are taking area by area. Take the credit card area. Acquisition is a big focus. We are working with the business partners to understand what they are looking for, what decisions do they make when they look at the report. So you start with what is the decision you are trying to make - on a daily basis, on a weekly basis, on a monthly basis. Does year-to-date make sense on a daily basis? Is there any decision you can make based on that? So it's that conversation to say "what decision are you making?", and then you work backwards and build a prototype, make it more visual - red, yellow, green; trend lines. So that you can quickly see that. And then what we are trying to do is to build a prototype, and without any data or with dummy data, say, "Does this help you?" And go through multiple iterations; then you build this up. Next year, 80% of reports are going to be automated, and it will all be built with that process. So we will move away from all these excel sheets being rolled out. All of that is kind of parked here [referring to diagram]. To me, unless you do this [referring to diagram], you will only do this on the periphery. You cannot do it as a regular core competency. Whereas this [referring to diagram] is where the core competency is. So we need to do a few things - we need to first create the infrastructure, then we create a team - I have small team that does modelling and experiments. Modelling COE [centre of excellence] is a small team and it's based out here [in Singapore]. For experimentation, I have a small team - there are 2 teams - one is a strategic projects team and the other is a data science team with specific skillsets like machine learning, location.

Eric   Are they all based in Singapore?

PAR5   Yes, they are all based in Singapore. These are all core competencies. In the past, they were being built out [outsourced], but I have brought it back in. My view is that these are core competencies and should not be outsourced. Outsourcing should only be done at this level [referring to diagram] - which is regular, repetitive, preparation work. But your core of experimentation should be internal. And then mindset. It's ok to try different things; it's ok to do a lot of experiments to know. And then you scale out. Because we don't like to fail.

Eric   When you say 'outsource', are you also referring to 'offshoring'?

PAR5   Yes. Offshoring as well.

Eric   So it can be internal, but offshoring.

PAR5   Yes.

Eric   And you've had that experience within GE for example.

PAR5   I've had many years of that experience!

Eric   So you are saying these kinds of work, at the top end - modelling and experimentation, you wouldn't offshore?

PAR5   So there are a few things I wouldn't offshore. So the top-end of the pyramid [referring to diagram] - this plus the business knowledge. I expect all my senior people to be in the country. And most of the teams are aligned to a channel or a product. I expect those teams to be small but to be very well integrated into the business. They need to be part of the business. And that part which is the continuity of the business knowledge, the continuity of the business. And both business plus the data. Are things we should not outsource.

Eric   So just to clarify again. Outsource collectively includes the offshoring piece?

PAR5   Yes, it includes offshoring.

Eric   But in a case like ORG4 where you now have multiple country presence, even if you keep it in Singapore, Singapore is an offshore for the other countries …

PAR5   So what we are doing is that the business knowledge is with the country. My model is - each country has a BA [business analytics] team which works closely with the business; it reports into the Consumer Banking head. In-country, embedded. Their hard-line reporting is to the Consumer Banking Head. The soft-line reporting is into me. And that is something I'm very clear on. That is the right way.

Eric   And that has happened already?

PAR5   That has happened already. Each country is at a different stage of evolution. They might not be able to do modelling, data science, etc. So we [the regional analytics team] support it and send people out to them. Skills and expertise on modelling and experimentation are some of the things we are building centrally. But the business knowledge, and the working with the business is within country.

Eric   Ultimately, your desire is that if every country had the ability to do it for themselves, then you won't even need this small 'hub' in the centre?

PAR5   Actually this is where I'm still not certain. I think we will need a hub in the centre for some specialised skillsets which we will never get scale in almost all the countries. And to me that's really about modelling. Because newer techniques, this and that ... modelling which is pure hardcore modelling. And the other is ... I'm still struggling this whole data science thing. Data Scientists are not just technical people, they need to understand the problem. When I look for data scientists, I'm actually looking for 3 things. One is the ability to take a business problem, translate it into a data problem, solve the data - get the data solution, then translate it back into the business. So we are able to find the data problem to the data solution guys. But we don't find is the business problem to the data problem guy. To me, that's the more

important linkage to drive value and impact. Where the business problem to data problem, the data solution to business solution. So those are things where skillsets, availability of resources ... all of that at a country by country level is very difficult. So I see that there are some parts that will kind of be centralised, and we'll see how that evolves over a period of time.

Eric   Let's come back to the organisation structure. Your role is Customer Experience and Analytics and you report into …

PAR5   Yes, and I report into the Consumer Banking Head. So I'm part of the business team.

Eric   And the reason for that?

PAR5   I think it's historic that it reported into it. I think it's the right way to go. Because if we have to solve the business problem and be part of the business, we have to be aligned with the business. If we are part of Technology, we become back-end.

Eric   Was it ever reporting to Technology before?

PAR5   Not that I know of. I think every team has their own analytical team within themselves right now. So it's bit of a mish-mesh all round.

Eric   So Consumer has analytics team. IT has their own analytics team …

PAR5   That's right. While they call it Analytics team, it's largely reporting.

Eric   But within Consumer, where you are part of, a lot of the analytics that you do is Marketing-oriented … customer analytics?

PAR5   Yes.

Eric   Do you get into the other spaces as well?

PAR5   Not so much. Largely customer analytics, product analytics, channel analytics. Things like queue length, that kind of analytics. Not so much Risk analytics … we don't get into the Risk side of it. We don't do Credit Scoring - there is a separate team that does that. The way I see it, the infrastructure should be the same. Even the data assets should be re-usable across all these players.

Eric   Today they are not?

PAR5   Today they are not. Then maybe we still have specialised teams on top. But we are not there [today]. My fundamental thing is first to get the core in Consumer Banking Group right.

Eric   But who owns that 'core'?

PAR5   Nobody. That's one of the problems. By default, I'm saying it's my ownership. So I own it. So now I have Technology teams having a dotted line into me, who run this architecture. I spend 50-60% of my time on

technology now. Fundamentally, I believe if you don't get the core right, we are building all this on sand. We will get great things and show it on PowerPoint, but we will never be able to scale. That's the thing - if your set up something new like Netflix, your set it up from start as a single channel ... your set it up right. But here, we have years of legacy, tons of data, it's not just a matter of saying, "let's do it on this basis."

Eric   The bank has customarily been designed for operations and processing. Are your satisfied with the current reporting structure?

PAR5   Yes, I am. From my reporting [into] and my team's reporting into the business heads, I am satisfied. That's the right way to go. On some of the infrastructure pieces, some parts of which falls into technology or elsewhere, we are still thinking about how we structure it going forward. So right now, I look at it as my responsibility to fix it, so we'll figure out how to structure it over a period of time. But the key is - whoever runs the analytics function needs to be heavily involved and be a decision-maker when it comes to technology architecture; data architecture decisions.

Eric   You do see companies having CIO [chief information officer] or CAO [chief analytics officer] and they have a remit over IT, or at least the information management part of IT and the business?

PAR5   So I've spoken to quite a few people. It's a very difficult skillset - to have someone with a remit across both [IT and business]. We've been trying to hire a senior person on the data architecture, mainly on the technology side; dotted-line reporting into me and hard-line reporting into Technology, and helping us shape what the 3-5 year plan from a data architecture should look like. I'm very clear about the business blueprint. What I'm not very clear, and not my area of expertise, although I'm very clear that I need to drive it. Because it has to be outcome based.

Eric   You know it doesn't work today, you don't know why, but you know it doesn't work …

PAR5   I know enough that it should be focused on what we are trying to solve for. If your leave it to Technology, they will get the most efficient and sexiest machine, but is that what we are solving for? There are 4 things that we are trying to solve for, that we need the data for: we need the data for marketing - contextual marketing or contextual interactions; campaigns. Both real-time and batch, but across channels and consistent. We need the data for adhoc analysis - and when your need the data, it shouldn't take your 3 months to pull data and massage it; it should be ready. Third is we need data for modelling; most models take 3 months, but out of the 3 months, 6 weeks is [data] preparation time and how do your cut that. To create a modelling mart of 16,000 variables - it should be ready on the tap. And the fourth is reporting. Self-help reporting. These are the only 4 uses of data that I seek.

Eric   ORG4 has [SAS] Enterprise Miner. With Enterprise Miner, did it not come [installed] with a modelling datamart? Because that was what they would have proposed.

PAR5	It might have come, we might have bought it, but it never got implemented. All of it is about implementation. Or they might have implemented it half-baked, so it did not work and people did not invest to make it work. So they [end up] fetching the raw data and dump it into SAS and do it in SAS. In the past, we always use to do point solution. If I'm building a model, this whole re-usable layer is the thinking that I'm trying to drive. If you are creating 500 variables for this particular month, put it into a re-usable layer so that 40-50% of that can be re-used in some other model. Even if it means investing a little more upfront. Typically, it's the time and money [factor] upfront. People say I want it faster, I want it now and I want it cheapest. So the cheapest is a point solution. But then long term ... So one of the things is that my role is help educate people and be part of it to say, "We have to go slow to go fast."
Eric	The accumulated cost of the point solutions over time may be high.
PAR5	Yes, but nobody looks at that. Everyone's looking at the budget for this year. So we need to create that space to be able to do that.
Eric	And you support all line of business in Consumer Banking?
PAR5	Yes, from Private Banking …
Eric	Oh, it includes Private Banking! SME Banking would also be part of it?
PAR5	No, not SME Banking. That's part of the Corporate Bank side.
Eric	What about the horizontals like Operations? [Do you support that?]
PAR5	Operations has their own Analytics team. Consumer Operations does not have a hard-line reporting into the Consumer Banking Head. They [Operations] are at an Enterprise level.
Eric	Call Centre would be part of Operations?
PAR5	Yes.
Eric	But there is a Consumer Call Centre?
PAR5	Yes. Call Centres are largely consumer. So Operations, including Call Centre, would have a smaller Analytics / Reporting team which takes care of the regular operating metrics, all the SLA [service level agreement] metrics. That's the bulk of the job. They also do operations efficiency related analytics.
Eric	But the Channel infrastructure sits with Operations, while the Channel interfaces with Marketing.
PAR5	Yes. But when it comes to anything that is customer related, it comes in to my Analytics team. And that's where this common layer [referring to diagram] needs to be re-usable. So we are working together to create this re-usable 'layer'. They [Operations Analytics] can use any of these data structures, and they also have a data asset around 'interactions' - how many

times does the person call the call centre, what do they call for, when they log in, where do they log in, all of that. So on the Consumer side, anything that is related to the Consumer Bank, I have ownership and accountability. Even though my boss may not say that, that would be the expectation. And that's why I go deep on the data technology side. If you don't do this [data architecture], then all this [referring to diagram] is difficult.

Eric   How have you organised your team, given the different lines of business that you support, and the commonality …

PAR5   Every country organises it. My 2 core countries - Singapore and Hong Kong; the rest are quite small and so they have a smaller team.

Eric   What is large, what is small [team]?

PAR5   So we have 3 big core countries - Singapore, Hong Kong and Taiwan. Then we have emerging countries - India, China and Indonesia. Customer base in these [emerging] countries is like 40-50 thousand. Hong Kong has 1 million+ customers. Taiwan has around 800-900 thousand customers. Singapore obviously has 4-5 million customers. So those 3 are core markets and the others are emerging markets.

Eric   The [Analytics] team size reflects the size of the customer base?

PAR5   Yes, reflects the size of the customers, the business. Singapore is the most complex; Singapore and Hong Kong. The Singapore Analytics head reports into the Singapore Consumer Banking Head. Dotted to me. But earlier, it used to be hard-line to me. My whole view is that the Analytics team need to be well-integrated with the business and be part of the decisioning process. Because of the analytics affinity, the functional affinity is always there. And we can always have the functional influence. But the focus should be on integrating with the business; make sure we understand the business drivers, understand what they are trying to do, understand what decisions you want to make, understand what we want to drive. And help them add value. So the Singapore analytics head reports into Jeremy Soo, who is the Consumer Banking head, and under him, the Analytics team is basically structured to mirror Jeremy's structure. So there is somebody who supports the Deposits piece of it, there is somebody Cards and Unsecured Lending, then there's the Channel structure, there's Bancassurance, then Treasures [priority banking].

Eric   When you mirror it this way, do the Analytics vertical own the Reporting and Campaign separately for each vertical as well?

PAR5   Campaign set-up is verticalised, but in the centre, I have a few teams who are across all of it. Even within my team, I have a data structure group, which is a small team that liaises with Technology. And then Campaign team which is a common CoE [Centre of Excellence].

Eric   A CoE?

PAR5   It's only for Singapore. So the way it works [proceeds to draw diagram 2]. So this would be Cards and Unsecured, this would be Deposits [vertical teams]. And here [horizontal team], there is a small team for Infrastructure and Data.

	Things like 'Do Not Call' updation and all sits with this team. And then there is a Campaign [horizontal] execution team.
Eric	But these 2 [horizontal] teams are your [regional] team?
PAR5	No, they are Singapore country teams. They are all in the Singapore country team. This [campaign horizontal team] is mainly execution. These guys [vertical teams] do all the work to liaise with the business, even campaign structuring - they do it. Campaign design, customer selection, etc. These guys [campaign horizontal] are into the execution.
Eric	This is exactly like ORG3
PAR5	In ORG3, they move this also [campaign horizontal team] to India, right?
Eric	Yes, in my opinion, that was a mistake.
PAR5	Country by country, these are different. I don't see us being in a scenario where we can centralise. I think we need to have specialised skills that are working very closely with the business. To me, these teams [vertical] are very important. These are what I call the value-add teams. This is where you need to understand the business.
Eric	And these vertical teams would take charge to decide if you need to build a model?
PAR5	Yes, they will take charge. Then I have a small outsourcing team which is based in India. It's an outsourcing team, but what we have is … each of these [vertical] have 2-3 people who are outsourced to a vendor in India …
Eric	They are not ORG4 staff?
PAR5	They are not ORG4 staff. But the way we do it is to treat these staff like team members - some are sitting in Singapore, some are sitting in India. Because we do so much reporting, they [outsource vendor] do a lot of the preparatory work for the reporting.
Eric	Is this the vendor that [PAR5's predecessor] set up? EXL?
PAR5	Yes. So each of these [vertical] teams have that [pairing]. My direction to my team is that these [outsourced vendors] are your team people.
Eric	They [outsourced vendor] are hard-mapped to the different verticals?
PAR5	Yes. Dedicated. They are not 'floating' but dedicated. These guys [vertical] decide what to work on.
Eric	If you have this [organisational] structure, then out of curiosity, then why do you need a vendor like EXL? Why not have your own resource?
PAR5	For historical reasons.
Eric	Because that would be the same.

PAR5	Yes. Again, it's a classic case - if I have my own [offshore] versus in India [vendor outsource]. One is cost efficiency.
Eric	But you can still set up your own offshore in India.
PAR5	Yes, but all the HR processes … it takes a lot [of work]. You know, [staff] attrition is at 40%. Then the HR processes, all the overheads … the cost is quite significant. And ORG4 had never had their own in-shore centre. You can't set it up for 30 people. You need to a big enough centre which you then need to manage and run it very separately. Because 30 people doesn't scale.
Eric	Then has ORG4 considered China then, as an offshore [location]?
PAR5	Not … no.
Eric	Never? Despite the talent? China claims they have smart people, it's cheaper and all that.
PAR5	Yes. Because events went down one way, and it's too costly to set up infrastructure in multiple places. So, you know, that Citrix connection, leased lines, all the audits. We have huge MAS requirements. So the overhead is too much. To me, one of the fundamental thing is that a 30-people team is not economical. Because the overheads are too much, and the other costs are too much. So either we scale it ... long-term we have to figure out how to manage it.
Eric	So this is the case for Singapore and the other 2 large countries - Hong Kong and Taiwan …
PAR5	They [Hong Kong and Taiwan] doesn't have the EXL.
Eric	Oh, so it's [EXL outsource vendor] only for Singapore?
PAR5	Yes, only for Singapore. And also, language is a barrier. And again they don't have scale. Because our data is not centralised. Hong Kong data is in Hong Kong.
Eric	Oh it's not brought back here into the [Singapore] data centre?
PAR5	Not yet. That's one of the things we are working to see how we can do it.
Eric	Taiwan's data is also there?
PAR5	Taiwan's data is also largely there. So now, we bring it back for a Risk and Financial reporting, but that's at a consolidated level.
Eric	So for all intents and purposes, they [Hong Kong and Taiwan] are separate entities; separate operating parts. And your role at the HQ level is to drive consistency of approach …
PAR5	One of the things I'm driving is also to bring the data in. Because by bringing the data in, we can leverage the same infrastructure, we can leverage the

same tools. Even with bringing the data, I don't want to centralise the teams. But make sure they are able to leverage the data infrastructure, software and all of that.

Eric   It should be transparent to them, whether onshore or offshore, in terms of data.

PAR5   Yes.

Eric   OK, so I understand these vertical [teams]. In terms of the team size, in terms of the 80/20 rule, where would most people be residing, in a structure like this [referring to diagram 2].

PAR5   Most people are here [vertical teams]. This [campaign horizontal team] is a small 7-8 member team, but I see this growing as we go into it. I want it to be more strategic. So we are getting people into more campaign design, helping them think about a campaign from a long-term. Don't do just point campaigns. Think about campaigns which have multiple waves. Point campaign is: I have a product, I need to cross-sell (e.g. personal loans to the card base). We need to do that, but it shouldn't be 99% of the work we do. We should also do things which are led by events. One of the simplest example is 'birthdays'. Everyone has a birthday. And you know it in advance. But you hit them one day before the birthday. But the point is, can you build it into a multiple wave [campaign]? So you say I month before the birthday - I know these are a few things of interest to you, can I give you a communication which is linked [to that]. 10 days before the birthday, based on what you have planned or help you to plan; what have you done. Maybe it's your wife's birthday.

Eric   That's probably more important!

PAR5   That's right! So how do you move from a point to looking at it from a customer journey perspective. And that's where my Customer Experience teams are working with them and saying - how do we try it out and sell it? So we're creating a small cell [taskforce] to do it. We have a taskforce with the business to try and think about it very differently.

Eric   Your Customer Experience team is totally separate from these [vertical and horizontal] teams?

PAR5   Totally separate.

Eric   And how do they [Customer Experience team] interface then?

PAR5   They don't. Except for when they come to [work on customer] 'journeys' together. So let's say I'm driving this huge transformation on customer contextual interactions. So the CE team interface with the Analytics teams and the Business teams to pull things together - how do we start experimenting differently. How do we create a process and a structure for the long term? We do small experiments, and the output of those experiments help us.

Eric	So the CE team pursue their own independent tracks. As and when they need analytical support, they bring them in.
Eric	When you have these verticals, say in Singapore, supporting Jeremy in Cards, Bancassurance, etc. Do these vertical teams sit with the business? Are they all sitting centrally and physically in one place?
PAR5	Because of space constraints … they sit on the same floor as the business. They sit on the same floor as their teams. So the Cards team might not sit next to the Cards business, but they sit on the same floor as the Cards business.
Eric	So in some sense, they are physically embedded with the business. But within your own Analytics team, they are not seated together?
PAR5	So the bulk of my team sits on the 5th floor in Singapore. And some sit on the 15th floor because there's not enough space. So, if this is all Jeremy's world, and Jeremy is only on the 5th floor … and this is part of his world where the Analytic teams sit. It's not like this sits with the Cards team and this sits with ... it's kind of ... they are still seating together as an analytics team, but they are on the same floor as the business.
Eric	But if your business [that you support] were on multiple floors?
PAR5	That's a tough thing. I think there are advantages and disadvantages. It's really where you want to focus on. Co-seating with the business leads to better integration. There's learning, there's data, there's re-usable assets that you get with the Analytics teams seated together. So, to me, it's really about driving a mind-set rather than driving proximity. So the mindset is that you need to work very closely. It doesn't mean you have to sit with them. In my entire GE experience, it didn't matter where people sat.
Eric	Because you are always interacting anyways?
PAR5	Yes. I know people who sit right across from each other and they don't interact. Given that we are moving towards virtual [office], co-location is not important, but co-mingling and co-working is important.
Eric	But does it matter what mode or channel the interaction is taking place? So I've heard people say, for example … part of the challenge of offshoring is that yes, we have video-conference but it's not the same.
PAR5	Yes and No. To me, it boils down to ownership. And that's why I have made these guys [vertical teams] responsible for it - managing their respective EXL resources. If there was a central person responsible for EXL, it would never work, because they would never have ownership of their teams. So let's take the Credit Card [analytics] guy. He has 3 people at EXL. They are no different from his 4 people that he has in Singapore. It's his team. He decides the priorities, he decides what work they do, he gets a kick if they screw up. It's his team as far as I'm concerned. So they have ownership. If, on the contrary, he only owns 4 people, and all of EXL is owned by somebody else, that is a recipe for disaster. Which is how most banks have

structured. In this way, the ownership is here [Analytics lead] - he needs to decide how to make it effective.

Eric   And he chooses how he wants to interact with his team. Even though it's not face-to-face, it's still possible?

PAR5   To me, communication is all about accountability. If you take ownership, you will figure out how to communicate. If you don't, it's the easiest excuse in the world.

Eric   Do the EXL people fly into Singapore occasionally?

PAR5   They do.

Eric   So they do get to have some face time here to see and understand the context?

PAR5   I make sure that every quarter, different teams visit India. They go to India. And the EXL guys come here as well. Because that interaction and networking is very important.

Eric   Does it boil down to 'trust'?

PAR5   It does boil down to trust. It does boil down to just having a rapport.

Eric   But these people in EXL experience a high turnover, even though they are dedicated [to each team]?

PAR5   Yes, that's one of the bigger problems. So one of the things we have done with EXL is to create 'shadow resources'. If I have 26 resources dedicated across my team, I have another 15 which are shadow resources.

Eric   An offshore within an offshore?

PAR5   Shadow within an offshore. They are basically people on the 'bench' [reserve team]. So that's part of EXL's investment that I'm having them do. So when somebody leaves, that shadow comes in straightaway. And these guys know and have worked with the shadow.

Eric   They know them upfront already?

PAR5   Yes, so it's a shadow that's dedicated.

Eric   For the guys who run these vertical [analytic teams], what kind of background and competencies do they generally have?

PAR5   They are largely people who have grown through the analytics area.

Eric   Not from the business side?

PAR5   Not from the business side. So they have SAS skills, they have an understanding. Some have come from external - analytics consulting, SAS, that kind of thing.

Eric	Does it limit the kind of problems they can work on, or limit the type of interactions they would have with the business?
PAR5	One of the things we are trying to develop is - how do they broaden their understanding of the business? To me, when I hire for these roles, I hire for smart people, not just technical skills. I hire for understanding of the business problem and finding what are the '3 solutions' and not the SAS coding. What are the 3 things you can think about? So in the long run, they should understand the business. Be able to translate it.
Eric	But how would they understand the business if their entire career was on the analytics side?
PAR5	It is a challenge. Because getting a business guy to do it is very difficult. Because they have zero comprehension of the challenges. So yes, I can come in and theoretically on a PowerPoint say - we'll do this campaign, we'll do this data. But you have no idea of the reality. When I first came in was talking about contextualism, and some senior guy would say - we should be able to do what Target did. Be able to predict pregnancy, right? We should be able to know from SKU data and ... "where is the SKU data?" And even the credit card data is so unclean. A lot of that understanding, and the understanding of the techniques, understanding of the challenges. To me, I would love to have a business guy transfer into Analytics. For the Singapore business analytics role, I've take a business person to run it. No technical skills. Strong analytical appreciation. Strong analytical thinking. But a through-and-through business person.
Eric	How is it working out?
PAR5	It's been 2-3 months now. But I think it will work out. Because they bring in a business perspective and can help coach these guys on having a better understanding of the business; driving the outcomes.
Eric	Do you send any of these vertical guys to be attached to the business - let's say, "I want you to take on a business role for 6 months …"
PAR5	I would love to do it but the [organisation] structure is not conducive at this point to release them, refill the role … we don't have that kind of rotation capability.
Eric	But do they [the analysts] rotate across the verticals?
PAR5	Yes, after 2 years. I do try and move people around. But the bigger understanding to all of this is that all these guys [analysts] are part of the business management committees. So Credit Card has a management committee, so these guys [Credit Card analysts] sit on that committee. That is where the knowledge, understanding and context comes in. Because when you are part of that discussion, you understand the priorities.
Eric	It's very much like ORG3. ORG3 is structured that way also. While at ORG3, the business is the one that causes us [the Analytics function] to grow. So when the business has more need, they will say, "Look, I need to

get 3 more guys." While we [the Analytics function] pays for it, they [the businesses] make the case to the CEO for the incremental headcount.

PAR5   So right now, it's a mixture of that [in ORG4]; we do a bit of that. One of the things I'm trying to do is, more and more, try and create reporting that is self-automated and data assets that are re-usable. That's the biggest gap. If we invest a little bit more upfront, automate a lot of this stuff, then a year from now, we would be able to do a lot more.

Eric   Within each of the vertical, say Deposits or Cards, what is the type of business problem that they work on. So, typically from a campaign perspective, it's very clear - I need to target a particular customer segment, please help me do that. Do they get involved in say, "If I need to launch a new product, what should that product configuration look like, where is the demand and supply coming from?"

PAR5   Not so much on a new product as such. Because we are part of the management team, we get involved. So let's say we are thinking of a multiplier product. So we say, what are the cross-pollinations, who many are there who already have these products … so a lot of the sizing of new products, a lot of the thinking around that, they would be involved. Because it's part of the management committee ...

Eric   If you had to launch a new credit card, say. Building the value proposition, building the 5-year P&L to know it pays back …

PAR5   That would be largely led by the business, but these guys [the analysts] will be very heavily involved.

Eric   But they [the analysts] would not own it?

PAR5   They would not own it. Our design is that a lot of these things are owned by the product guys.

Eric   And you prefer it that way?

PAR5   I prefer it that way. Because lines of accountability should be very clear. We should be very clear what we [the analysts] provide. In a product sense, I see the product guys, or the customers - either it's the product or the customer which has to have ownership on "are we delivering the right thing?".

Eric   So would you say that most times, the kinds of problems that they [the analysts] deal with tend to be much more … for lack of a better word, 'constrained' already because the objective of the problem is quite clear to them?

PAR5   These guys - yes. But one of the things we also have is this whole piece of experimentation. This is where we do 8-10 uncertain problems.

Eric   But who decides what experiments?

PAR5   It's a joint decision at the leadership level. Based on the strategy that we've presented to the CEO for next year and the next 3 years, what are the 4-5 big

areas we want to focus on. Then we work together in those 4-5 areas, and say, "What do we want to change about that conversation?" With the business guys. And then we come in and present something and take a collective decision and agree to the 4-5 areas we would focus on. For experiments, we would put business people in it, we'll put data science people in it ... and then there will be a test & learn ... we have a full plan around it. This is where a lot of the new stuff comes in. And these guys are involved in the new stuff. This is where the 'uncertainty' comes in.

Eric   So like say, 'branch transformation' …

PAR5   We are actually doing one [right now]. This would come in here [referring to diagram]. Because then I would pull in Customer Experience, I would pull in Analytics, I would pull in Data Science, I would pull in Branch RMs …

Eric   But each of them would have a piece within themselves that is well-crafted and well-articulated?

PAR5   So there would be an overall initiatives lead. It could be anybody. Unlikely to be from the Analytics function. Either it could be a Customer Experience person, it could be a business person, it could be a COO. Overall, we have 3-4 of these things running. I have a Retirement Proposition running and the overall lead is a Bancassurance person. And then there are lots of people under them - it's very task force driven. I have a contextual marketing thing which is led jointly between Analytics and Customer Management. We have something on Branch Transformation which is led by the Chief Operating Officer of the Consumer Bank. And then within them, they have various people, various stages.

Eric   But do you get a case, say, "ORG1 massively increases its CASA interest rate. Would there be a case where in the senior management meeting they say, "Mr Analyst, go figure out what I need to do about all these." So it's open-ended.

PAR5   It won't be saying, "Mr Analyst, go figure out." Typically, it's the products guys who typically have end-to-end … I subscribe to the FMCG model of product ownership - end-to-end ownership from cost to revenue. They will say, "What do we need to do?" Then they jointly define the problem; it's an iterative process. You get some data, you re-think the problem, you get something else ... it's working together around that. That's why the ownership and working very closely with the product [heads] ... it's not so much a hand-off process but rather a working together, iterative process.

Eric   And in the interactions that go back and forth, do you feel that the team [Analytics] today gets criticised for incomplete or irrelevant analysis?

PAR5   Yes and No. The more closely they work together, the less the criticism. If they work in isolation, then they get criticised. Because the other person [business] doesn't even know what's going on and it seems like a 'black hole' - I send something and then I'm getting something back, and I have no idea what the analyst is working on. That's why if they work closely with their [business] partners, and there's a back and forth, then it's really about that.

Eric	With the EXL [outsourced vendor] team, say in Credit Cards - the EXL team never faces the business directly?
PAR5	The EXL team is part of this [referring to diagram]; the business interface is here. EXL is an extended team and the [onshore] analysts figure out to use them or not.
Eric	So does your Credit Card analytics head complain that about the EXL guys - that the work they do is sometimes inaccurate, irrelevant or incomplete?
PAR5	Yes, they do. But then I tell them, "What's the difference with your team sitting here? Would you complain? Why don't you go fix it."? It's no different. If there is a person reporting to them and he's sitting in Singapore, and if he does irrelevant work, then you won't complain to me, you would go fix it.
Eric	But is the degree or frequency of irrelevance higher [with EXL] because they are offshore?
PAR5	Yes, it is. But it's not so much irrelevance vs mistakes. Because of churn [staff attrition] or they don't understand …
Eric	Mis-interpretation of the data?
PAR5	Yes, mis-interpretation or mistakes. But a lot of the EXL work is not so much mis-interpretation. EXL work is more of the regular stuff - data preparation. They are not really doing what I would call 'problem solving'. So what happens is the onshore team does the problem-solving and they say, "I need a data mart to put all these [data] together. Go do it." The outsourcing works when you have it very defined - where you dot the 'i's' and cross the 't's'. Because then the chances of mistakes are low. If you give them an open-ended thing, that's where ...
Eric	The distance does compromise the ability if it's open-ended?
PAR5	One is distance. Two is the nature of the whole team [EXL] that we are hiring - different skillsets. It's not so much the distance, it's more the way we have set it up. It's not set up for open-ended. We set it up for doing repetitive, boring tasks well.
Eric	And do you want to get into more open-ended type problems with the vertical teams?
PAR5	With the outsourcing team?
Eric	I mean even with the current onshore team.
PAR5	Yes. Smaller open-ended types, yes. But transformational ones, no.
Eric	Why not?
PAR5	Because I think it's a case of 'urgent' vs 'important'. Let me give you an example. Retirement is an open-ended question that I'm working on. To the

Bancassurance person, he is very, very involved in the retirement issue. And they will be core to that. But at the same time, they are not alone in driving it. I have support from the Strategic Initiatives Group that can project-manage it, the Data Science Group who can think beyond what is right now, and then these guys [referring to diagram] are involved because they bring in the realism to it. And it's an evolving model; it's about their current capacity, ability to take out time to think about these things; they have a lot of urgent [stuff on their plate]. So these things which are important but not urgent gets into the backseat. So, to create that focus, we create a task force. [In this example], the Bancassurance person is a key person on this task force.

Eric How do these people [vertical teams] feel? You have a view, strategically, how it should work. Do they feel that they are limited?

PAR5 I think it's an evolution process. They may feel a bit limited, but they are also learning. Each of them are also owning a piece of the strategic initiatives. So the Cards [analytics] guys, along with this, owns the whole location piece, where they are working with the taskforce; he's actually leading the taskforce. To me, it boils down to giving them exciting work. Reporting is the bulk of their work, which is not exciting. And then you have the adhoc analysis which is based on supply and demand, and there's the smaller open-ended questions. And then each of them is involve in one big transformational initiative.

Eric Do these horizontal teams like Campaigns and Reporting have 'heads-of'?

PAR5 No, I don't have a head for reporting. Reporting is with these guys [vertical]. Reporting is done by my product [vertical] teams. The data marts are right now owned here [horizontal data architecture team].

Eric Is there a head of Campaign? Are the campaign folks dedicated to each product vertical team?

PAR5 Yes, there is a head of Campaign.

Eric So who is held accountable when there are problems with Campaigns and Reporting?

PAR5 If a Campaign screws up in the selection [process], the Campaign team is the ones who get the first kick. That is if we had mapped it wrongly. But if the campaign did not work, it gets discussed at a monthly campaign forum. At the end, most of the guys report into the head of product vertical team. So when things screw up, it mostly comes through here [vertical head]. And he can figure where in the chain things went wrong. We had this issue over Christmas where we sent SMS to customers. For some 20,000 customers, we missed out their names. It just went - "Dear __". We sent it out to a million customers and 20,000 screwed up. It became a big thing and we went back to diagnose it, particularly in my other role as Customer Experience head. We found that it was a mapping issue in the Campaign team.

Eric They got the mapping right, but didn't realise the field was null for some customers?

PAR5   Yes. But there was also some mapping error that was done that led to that. To me, all of this is because of data infrastructure is not robust. Human errors will happen but if what they are trying to solve for is not available and they are then another field as proxy, but that new field was built for some other purpose ... they did a sample check and it looked ok and they sent it off. So it's really about trying to fix the process.

Eric   But if they had done a 'count null' script, they would have detected the missing data.

PAR5   Yes, they should have done that.

Eric   Anything you would like to change about the organisation design? EXL being a legacy and all.

PAR5   This structure is something we are creating and using. So to me, it's really about embedding the structure. My biggest thing is - how do I move people up the value chain, in terms of helping business solve their problems. And to do that, we need to solve a lot of these infrastructure issues so that we focus our time on the analysis part. And it's really about the mindset. Because my analytics team has been built as a team that responds to a question. Reactive. How to become proactive and become part of the conversation? Because we are already part of the management team. But the mindset is not there. How do we bring a solution to the table? For example, there is a broader discussion on how we respond to ORG1 [competitor bank].

Eric   Is it a question of confidence?

PAR5   Partly confidence, partly our ability to take it up to speed. It's also how we've been built. It's a part of mindset change and culture change, and not just our [analytics] part, but also the business part.

Eric   The business must also be receptive to wanting the analytics team to be proactive.

PAR5   That's right.

Eric   And you are saying that today, they [the business] are not necessarily so?

PAR5   They are somewhat receptive … it's a mixture. So in my case, it's not a problem. I comment on anything and everything. Because between analytics and customer experience, there is nothing in the bank that doesn't touch one of them. So I will always have a view on either. And because of the breadth of my experience, it's easier for me to comment. So, how do I build that confidence in the team and get them there. That's going to be one of the key challenges. The other thing is - how do we broaden our [analytics] scope beyond just the business side of Consumer. So [ORG4 CEO] has asked to think about - how at least on the data infrastructure side to go beyond Consumer; how do you think beyond?

Eric   So like [ORG$ Group Audit Head] building his team [Audit Analytics] or Operations or HR investing in their own analytics team.

PAR5	Because they'll never build scale. They will build 1 or 2 people because of the excitement, the person will leave. It's a sub-scale non-repeatable thing.
Eric	It can take off for a while but it's very people dependent. The minute the top guys leave, it resets again.
PAR5	Yes, totally. Long term, unless we build this data infrastructure right, all of these guys will build their own SAS shops, will build their own SAS codes, without building any re-usable assets. And then when the person leaves, there's very little documentation, somebody new coming in, it will be a reset all the way.
Eric	That's pretty much all the questions I have. Is there anything you would like to add?
PAR5	One of the fundamental thing is that the analytic teams need to start thinking like business. That means it's not just my job to provide the data or insights, but it's my job to also be part of the decision on what to do.
Eric	They are not part of the decision today?
PAR5	They are involved in the decision …
Eric	But they don't take the decision?
PAR5	A lot of times it's the confidence to have a view on it [the decision]. They don't always feel that it's a part of them, that they need to be there.
Eric	They don't feel passionate about the way things must be done because the analysis indicates so?
PAR5	Whether it's analysis or not, it's more about thinking like a business person.
Eric	And that's where you feel is the largest opportunity and gap at present?
PAR5	At present. How do you transform. [Analytical] techniques and all are going to be there. But the longer-term transformation will come from the former [thinking like the business].
Eric	And that transformation is much more about the softer elements of how you want to train them for that?
PAR5	Yes, how do you train them, how do you use them, how do you add value, how do you create a pull rather than a push.
Eric	Eric thanked PAR5 for this time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections. And to indicate areas which are sensitive and should not be re-produced.

Person	Transcription
Eric	Eric thanked PAR6 and explained the BI&A organisation design research.

Eric   Can you briefly tell me about your background and experience with the analytics practice?

PAR6   I'm PAR6 from ORG3 Malaysia. I run the Decision Management function. By the middle of this month, I would have been in this role for 10 years. Prior to this, I ran the analytics team in RHB Bank for almost 4 years. And prior to that, I was working in a German software company called SAP, selling their Customer Relationship Management solution - SAP Installed Bases. I would consider myself a veteran in the field of analytics. I've looked at enough [analytical] tools also, a fair and diverse amount of problems and trying to find solutions for them.

Eric   I'm using this term called BI&A - Business Intelligence & Analytics - as a 'catch-all' for this wide spectrum of what people understand as Analytics. It may include MIS in some cases, or Database Marketing, the advanced modelling and all of that, but for lack of a better classification, I've lumped it all as BI&A. Many interpret this differently for themselves. Using this 'catch-all' of BI&A, what does this term mean to you or your company?

PAR6   Firstly, having worked here for 10 years, there was a lot of discussion previously, and Eric, you were privy to it [in your previous role with ORG3], there was a time where there was a discussion point as to whether the name of the analytics function should be changed. We all started in this function called Decision Management. And Decision Management as we all know it is the Analytical function of ORG3. I guess to me, BI&A is a function that helps the business define, understand, and perhaps find ways to solve the problems, although it's not necessarily the 'cure-all' for the problem. It's a way to bring out the extent of the problem and quantify the problem, and from the quantification, perhaps put some qualitative element of how a strategy could be formed; to attack the problem.

Eric   Could you illustrate with an example?

PAR6   An example perhaps is the consumer bank having an attrition problem as a result of the introduction of GST tax, which happened in Malaysia in 2010. And the entire credit card industry shrunk from 11 million cards to 8 million. And every competitor and card issuer was suffering from this, because consumers have additional cards that they were not using, and to save money, they would logically eliminate any card that they felt was not useful. As a card issuer, you are obviously trying to make sure that you have a way of ... first, identify the problem, how this is happening, and you would find as you run any analysis of MIS [reports], it points to the fact that most of these people who cut their cards up are not using their cards. Once you know

that, the question is, how do you use data to bring out and show how the business can solve this attrition problem, provide new things to counter the problem.

Eric   Who and which function does your BI&A report into and why?

PAR6   For the first 8-9 years of my career in ORG3, we reported to the Consumer Banking head directly. I was a direct report. Only until the beginning of last year when they restructured and put Decision Management under the Customer Franchise head. And that organisation structure is consistent across ORG3 Asia Pacific. So I now report to the Customer Franchise head.

Eric   And do you know why?

PAR6   I guess ORG3 was going through an alignment of the organisation, trying, rightly or wrongly, to respond to changes in the environment. My understanding was that they wanted the business heads to have a more focused view from a business perspective and align certain functions under specific groups that relevant. Now, you can argue as to whether Customer Franchise is the relevant organisation for Decision Management to be reporting to, but it is what it is today.

Eric   As the BI&A head of the function, do you participate in senior management meetings?

PAR6   Yes, I do. Despite the change in reporting line, the thing that they preserved was to make sure that Decision Management was still part of the [senior] management team that meets once a week, and that we participate in key business issues that are impacting the Consumer Bank.

Eric   I'm assuming, based on your answer, that you are not entirely satisfied with the current reporting structure where the Analytics team sits under Customer Franchise. If you are not satisfied, where do you think is the ideal place for the Analytics team to report into?

PAR6   I'm a believer that a function like Decision Management or Analytics or BI&A team, for it to play an effective role in providing the most value, it should be having a direct reporting into the Consumer Banking head. Or a CEO of a company, for example.

Eric   It need not necessarily be Consumer Banking, right?

PAR6   Well, the analytics function may not be in the Consumer Bank, it could be at the enterprise level … the reason why I say so is that sometimes when you put a function like BI&A under a functional area like Finance or Risk Management or even Marketing, it tends to be corrupted by specific biased decisions or interpretation of a business problem. And data doesn't lie. And because data doesn't lie, it is what it is, therefore, it is best told directly to a business head, so that the issues can be brought forward in an independent way. And therefore, the solution can be more direct and strategic.

Eric   How many years has your BI&A team been established?

PAR6   It would be 10 years since I started in Malaysia. Prior to that, there was Database Marketing that reported into the Marketing head. And that was only a small team.

Eric   Which line of business do you support?

PAR6   The Consumer Bank.

Eric   All of Consumer Bank or specific parts of Consumer Bank?

PAR6   We support more the business functions of the Consumer Bank, meaning the business side. Today however, we've moved into areas like Digital Banking and provided some help to the Operations area, such as MIS.

Eric   Do you support Risk?

PAR6   We work with Risk to solve our business problems.

Eric   How is your BI&A team organised?

PAR6   Let me start with 2 years ago. It used to be the Decision Management head, supported by the Retail Analytics head, the Cards & Unsecured Analytics head, a Campaign Management head, a Sales Incentive head, and an Information Management head. So it used to be 5 [vertical] areas. But in the last 14-15 months, since the re-engineering of ORG3, now I only have an Analytics head who manages all the analytics area, I have a Campaign Management head, I have a Sales Incentive Management head, and I have a Data Capability manager who is the single point of contact with the Centre of Excellence [CoE] to deliver the MIS.

Eric   What is the size of the team?

PAR6   Today, including myself, there are 19 of us. And this has been reduced from our heydays [before re-engineering] of 35-36 people.

Eric   If you were to include the offshore headcount supporting Malaysia, what do you think the logical staff strength would be then?

PAR6   Because Malaysia is a more regulated country as opposed to the other peers that I have, there are limited offshoring activities that can be done. So, I would count the MIS centralisation that has happened - so there will be probably be 2 persons in the CoE, a 1 person in the regional office helping out with modelling. So another 3-5 headcount.

Eric   So 19 + 3.5 headcount?

PAR6   Yes, 22.5 headcount.

Eric   But still significantly less than what it was 24 months ago.

PAR6   Yes.

Eric   Do you have sub-teams under those lines of reporting that you have?

PAR6	Sub-teams?

Eric   Yes, so under Analytics for example, does that break down further into different teams?

PAR6   Actually no. We used to but we can't afford to anymore. We now have to make sure that everyone is equipped to handle multiple types of requests. The only sub-team would probably be under Campaign Management which is under an area called COPS [real-time marketing] where I have a person who manages the Central Offer Palette system.

Eric   That's the real-time marketing?

PAR6   That's the real-time marketing. Today, it is lumped under Campaign Management.

Eric   Are your teams physically located, that is seating, with the lines of business that they support? Or are they physically centralised in one location away from the line of business?

PAR6   We used to be seated next to the businesses. But because we are now under the umbrella of Customer Franchise, we are now located together with the Customer Franchise group.

Eric   But even in the past when you were seated with the business - you had a Retail Analytics team, you had a Cards Analytics team, Campaign Team and all that, the Analytics teams all sat together but the business was also on the same floor. You were not sitting in the midst of the business.

PAR6   Yes, that's correct. Because of our access to confidential data, we were always segregated separately. But we were close enough to the business in that sense.

Eric   So they [the business] were at least within the same walking distance from your team. And now that you are under Customer Franchise, you are not within walking distance?

PAR6   We are within walking distance - a couple of floors up. We are on different floors now.

Eric   Does that change things?

PAR6   It does change.

Eric   How?

PAR6   We are no longer that accommodative; the relationship is slightly affected by distance, even though it's a few floors. And also because of a number of things that has happened in the organisation for us to be more focused in what we do. Let's say the flexibility has been reduced from 100 to maybe 70 now.

Eric	What do you mean by flexibility?
PAR6	Flexibility - used to be a time when business problems or issues happen, we could act on it within the same day to understand it or even look at the data immediately. Now it's no longer that spontaneous. It could be because of process reasons and governing reasons - we want to make sure the proper kick-off meetings happen and we discuss it thoroughly ... you can argue that this makes things more effective vs starting something from scratch without knowing where it's going to head ... but if you ask a business person, the flexibility has been reduced.
Eric	Is it because you don't sit within immediate walking distance from the business?
PAR6	Probably.
Eric	So, if you were not reporting into Customer Franchise, and I simply moved Decision Management to another floor. Would this lead to the same outcome in terms of loss of flexibility?
PAR6	Well …
Eric	Let's say you reported to the Consumer Banking head. But I simply moved your current Decision Management to another floor. Imagine 24 months ago, your team was taken out and put onto another floor.
PAR6	I would think so. There is always a human touch to it. Even analytics. Data is data … I always believe there is a human touch because data is being worked on by a human being. And human beings think; and human beings are sometimes guided by emotions and all that too. So I think the human touch plays an important role in analytics too.
Eric	When you were seated next to the business, did the business guys come over all the time?
PAR6	At the end of the day, we walked over and say, "Hey, how can we solve this problem? Is it the right decision?" And discussions like that happened.
Eric	And now there's less discussion?
PAR6	Yes. Distance, even by a couple of floors, does make a difference.
Eric	Are those discussions that tend be of a more face-to-face nature now being replaced by more remote-type mediums like emails and phone calls?
PAR6	I think so. Well, let me be blunt about it. I believe there are certain things you can offshore and certain things you can't offshore. That's pertaining to what's coming in terms of your questions. Some things are not meant to be offshored. And organisations have made mistakes by doing that. And if you ask me what can be offshored? I think MIS [reporting] is one area which doesn't really need specific human touches because it deals with more delivery and programs [coding] - get, fetch the data. However, the interpretation [of MIS] requires you to be closer to the business, to

understand. Rightly or wrongly so, sometimes it [the interpretation] gets influenced too by the intensity of something - because data doesn't show certain things of intensity - some data is only showing a point; it's not showing a whole continuum of things ... so, that it lost. So when there's no human touch to it, it can go any ways depending on how it's interpreted in terms of results.

Eric   Let's stay on this question a bit, since you brought up offshoring. You were quite passionate in saying that there are certain things you shouldn't offshore. But you said MIS was ok to offshore. What would you NOT offshore and why?

PAR6   Campaign Management is one [that shouldn't be offshored]. I strongly believe it creates a distance … it creates more distance for the business …

Eric   Isn't Campaigns like MIS also?

PAR6   You can argue that. Well, I used to think that it was just like MIS. That's what Sandeep [Regional Decision Management head] thinks too … and therefore it is of the same nature. However, Campaigns deals with the execution and how it is delivered to the customers, who are all human beings. And the reaction is not like an MIS where the number is just a number. You are talking about a live reaction that comes back, and in this day and age, where the responses are more real-time, you need a human being to be involved and interpret and understand the outcome. And also to react back to certain campaigns. Today campaigns are no longer 2-ways - it's multiple ways now. Actions come back with different reactions and requires you to take different kinds of actions. And I don't think we are at a stage where we have learnt enough for us to go on an autonomous mode to react to those things. And therefore, I think Campaign is different from MIS.

Eric   So you wouldn't offshore Campaigns. What about your Sales Incentive piece, would you offshore that?

PAR6   For the sales incentive piece, unfortunately, today we are going to move to a centralised unit. I think there are some parts of the sales incentive that cannot be outsourced because it's dealing with humans - pay-cheques and all that. There are some parts of it where certain elements of coding don't change much - that can be treated like an MIS. But there are pieces of it, like dealing with people's pay-cheques and all that, and I will be very cautious to do that [offshore]. A lot of things can happen if there is a mis-calculation.

Eric   And Analytics? I'm assuming that cannot be offshored?

PAR6   That's the one piece where the value-add is the highest for a BI&A function. And for it to be offshored - to be given to somebody else who sits somewhere else trying to figure out what could be the potential core problem, I think it's not doing justice to how a function that's been created to do its core value ... and it's very dangerous too if sometimes a person is ill-equipped. And I've had enough dealings with a centralised [offshore] team to know that there is no longevity and persistency, and a thorough understanding of what goes on in the market. That's the danger where I think

sometimes ... call it 'inefficiency' - because, hey it takes longer ... but if you are not there, you don't feel the intensity of the issue.

Eric   You shared that this is the highest value-generating part of your analytics function. Could you explain why that is the case? What is it that the analysts do that is so peculiar that it has to be onshored, that the value can then be realised?

PAR6   You see, at least for ORG3, we tend to have more of our seniors and more seasoned analysts be part of this particular area because you got to have more experience in not just data but you've got to know how certain things work; you've got to have an appreciation of how P&L works for the organisation, and then you've got to have the human-relations part of the business where you are actually dealing with product managers, portfolio managers, who are being surrounded by dynamic rules that are still changing - in the regulatory environment. So the appreciation of the whole environment comes into play. And for a less seasoned analyst who is trying to go with step A to Z, and trying to solve it from Step 1, 2, 3, 4, 5, etc., that's not going to work. Because by the time you get to Z, the environment may have changed; you may not be equipped to move fast enough to understand and manage that dynamic environment.

Eric   And that requires proximity?

PAR6   That requires proximity. And it requires you to have a full appreciation of how the business is running …

Eric   But I can always have a senior analyst in the offshore location.

PAR6   Again, I argue that because … I give the example today that the business has now moved 30-40% of its sales or bookings to an online environment, and for a person not being in that environment to understand what goes on on a weekly or perhaps even on a daily basis ... I think you lose a little bit of the agility ... there's a bit of distance.

Eric   If the analyst doesn't understand, is it a failure of communication? And if that was addressed …

PAR6   Communication … I have a view about communication. 99% of the world's problems is because of communication. Miscommunication. You are not going to be able to address communication [issues] even if you are seated next to each other - there is still a communication problem! So imagine if you are not seated next to each other, you are so far away - you can multiply that by multiples - I don't think ... even if you are able to bridge that ... I mean, sure, you are saying that if you have effective communication, your problem is solved. I don't think so.

Eric   What is it about the problem that defies this ability to communicate cleanly and precisely?

PAR6   Well, you can argue that not having a face-to-face view … you can say you are having a camera, you are having FaceTime discussion …

Eric   If the problem is precise and you know what the problem is - an attrition problem, let's say. Whether I communicate that to you face-to-face or on a phone or email, the problem remains the same. How else can I tell you that I have an attrition problem?

PAR6   I'm going to jump a few steps higher and say that - look, whatever we are solving is a human … a consumer, human-related problem. Behaviour, customer's behaviour. Trying to solve it through a program or an analytical modelling through an offshore site doesn't cut it, in my opinion. It's a human problem. We are here because we are trying to use data to support your decisioning of certain things that you are about to do. And somehow I feel that we are all requiring some human element and touch and proximity for us to be more effective.

Eric   Is it about trust?

PAR6   There is an element about trust. And unfortunately, trust requires time to develop. And human beings being human beings, you don't always trust a person from Day 1. Unfortunately, that's the way it is, in my opinion. I think trust needs to build over time. And face-to-face presence does make a difference.

Eric   A problem may sometimes have multiple interpretation - what we call equivocality. There are problems which are very precise in nature, which we call Uncertain - if I get more data, I would logically be able to reduce the amount of uncertainty. How do you see the issue of proximity, offshoring, centralisation being related to these 2 types of problems? Do you encounter problems that are ambiguous or equivocal? Do you see a lot of that in your day-to-day problems that you work on? Maybe prior to the centralisation and offshoring, and then now - do you see that type of problem or the mix changing?

PAR6   Yes and No. How do I answer this …? I have a view about it. Again, it's driven by personalities and experience, and the types of problems that you see. If it's [the problem] a clear-cut thing that we have seen and know it before, we tend to be able to jump into it even if we have few data, because the hunch is so strong such that more data doesn't change the outcome no matter what; because you are having that hunch which you are so sure of. There are some [problems] ... how do you put it ... equivocal?

Eric   They are ambiguous types of problems. Let's take the case of Malaysia imposing GST on extra credit cards, how do we deal with a problem like that? Is that an ambiguous problem? Because what is the objective? Is the objective to preserve the cards we already have and not allow for the attrition? Or is the objective to preserve our income stream? Or is the objective to preserve our market share - our top-of-mind visibility. One can argue there are many different dimensions as to what the GST impact is.

PAR6   Well, you have to go back to the business. What do you want to do? What is your strategy?

Eric   So when you were dealing with this GST problem, were you confronted with multiple interpretations of what the nature of the problem was?

PAR6   I think we were confronted with the fact that we did not want to lose more customers than what we already lost. We were losing customers; and everyone was losing customers. They question was whether you would lose more than others, and therefore, creating a scenario that it's a deeper hole that what it could be if we didn't take an earlier action.

Eric   But you mentioned that the nature of the GST, in the consumers' minds, people will give up the card that they don't use. Why pay for something you don't use. So in a sense, with your analysis, you would probably arrive at the conclusion that most of your attrition within ORG3 was anyway from inactive cards. And therefore, the attrition made no real material difference to your P&L.

PAR6   Well, we found out later that after the first wave [of attrition], there was a second wave. I guess the problem manifested further than where it went. So again, when you think in one dimension, the problem is the way it is. But then, problems can morph into multiple problems. So that's something no one can see further down the road unless you have seen it before and know how certain things are sequenced. But generally, you would have no knowledge that the problem would morph further because the other thing you can't control is what your competitor would do, after what you have done. So when they [competitor] do something that you didn't expect, because you always have an assumption that assuming all things remain constant, then this would be the outcome of my actions ... but it is game theory that things change, and therefore you need to react; when that new environment exist. So again, I think it's coming back to the situation where if you have your analyst seated somewhere else and you are trying to solve this problem, I think you would have reacted slower than how we had reacted before. We met almost every week as a committee when this [GST problem] happened; face-to-face; with the Consumer Banking head, with the whole team. And Decision Management was the one that showed the number, week-by-week how many customers we lost. And when the blip [spike in attrition] happened, we all needed to understand why certain things happen.

Eric   And would you therefore say that your understanding of the problem, or the nature of the problem, evolved and changed, from your first original assumption - when you first looked at it, you thought it was a straight attrition problem - but because of the need to present and update and meet every week, and stay in touch with it [the problem], and then peeling the different layers of information around the problem, you realise that the problem is different actually?

PAR6   Yes, correct.

Eric   And this ability to now see the multiple interpretations of the original problem … maybe the original problem wasn't even correctly identified …

PAR6   Possible …

Eric   And you are saying if this was done with an offshore team, it would have been very difficult?

PAR6	It would have been slower. And the outcome could have been very different, in my opinion. It could have been worse for ORG3. Or a different solution completely. We may have taken a different path. Now, the spin-off of this was the Customer Utility Value, and that was something that even today, it's recognised worldwide. So, to be the core project team to the business in this particular case was, I guess, the key evidence that you really need to be in the action, where if you are trying to peel a certain element of ... the root of the problem, sometimes it requires direct presence.
Eric	Do you get criticised today for inaccurate information?
PAR6	I get it all the time!
Eric	Inaccurate?
PAR6	It's the assumption or criteria that you apply to data; data in itself is never wrong. It's how you pull with a different criteria or assumption. So there are times when the business is looking at certain numbers, it's an inaccurate reflection of the scenario. And that is usually an outcome of the assumptions you've used to retrieve the specific data.
Eric	Is that perhaps more linked to 'irrelevance'? Which is my other question - do you get criticised for presenting data - the data is accurate - but it's irrelevant.
PAR6	I can't think of any clear examples. I believe I may have done so in my lifetime. Remember, people come to the table with different sets of expectations. You get that in ORG3 all the time. I come in, I suspect certain things, or I have a specific data that I've been looking at. I come and you are showing me certain data; I'm trying to understand which angle you are coming from ... some more astute business thinkers would come and listen to you first, and then formulate back and tell you that perhaps you are looking at the problem incorrectly. Some are more flexible to say, "Hey, I'm learning something new from you." And some are less flexible and say that, "I think you've got to go back and use my assumptions and then come back with the revised data and compare." Those cases will always happen. Because we all have different backgrounds, functional experiences and expectations.
Eric	How do you prepare your team … or built the capacity within your team to deal these kinds of ambiguous problems?
PAR6	We rehearse. One of the things about leadership development is that people need to go through a process of understanding and going through what we call 'grounding' - where you make sure they go through steps to achieve maturity in their work quality. And it requires coaching, it requires leadership development. Everyone will go through and make certain mistakes, and I guess the developmental steps is that you are there to make sure you point it out to them. It's 'PAR6's Academy' which I put them through - how they are supposed to graduate - step by step. The way I do it is that I expose them to different kinds of projects that allows them to gain that kind of experience.
Eric	Are you exposing them to incrementally more and more ambiguous problems? Is that what you are saying?

PAR6   Correct! That's right. So you start with a more straight-forward one, and when you know they are capable of thinking … and you will know this because you are always talking to them and you are always testing them on their ability, by throwing them an issue, a business problem, and see how they solve it. What angle. And sometimes, you'll be surprised. Because in the sessions leading up to the formal presentation, the thinking process just ... some of them really really amaze you, some of them disappoint you because you would have thought that they would have gone through a more thorough thinking. And you know how I look at things through mind-mapping. In the mind-map, you can see how far they've gone in their thinking. For me, it's a start to use a mind-map to know, to understand how deep they've gone into each problem.

Eric   Last question. Given the situation that ORG3 has now chosen to offshore, and to centralise, and all of that. To me, by the way, centralisation is not the same as offshoring. So centralisation, for example, today you may have MIS capability within the organisation across multiple departments, like Operations may have their own reporting unit, Sales may have their own reporting unit, small little teams everywhere. When you centralise, you can choose to centralise within your own onshore team. Whereas offshoring is more specifically to take it out of the country.

PAR6   Right.

Eric   In this current case, ORG3 has pursued both. Centralisation to some extent, although we've pretty much been centralised before that. But the biggest stance is the offshoring, which has been done. Given that you had to do that, what would you have done differently to augment the situation - you cannot change the decision to offshore because they [management] want to do it for a variety of reasons - how would you have mediated this situation to try to improve or retain the capability that you had in the past?

PAR6   If I has to restart all over again, I would staff an offshoring centre purely for MIS, and MIS only. And I would try to have a more … Centre of Excellence … that exist in the region. The local team would still have the flexibility, the power and empowerment to manage the campaigns and the analytics function. They only thing I would offshore - and it makes full sense to offshore, because I've seen it - is the possibility of the MIS function. And I would have some element of CoE or subject matter experts floating around to manage certain campaigns, analytics best practices, but keeping the work in the country. So this is going back to 2008/2009, but at that time, we didn't have an MIS offshoring. So that's the only difference. I would not have the modelling ... well, you can argue to that offshoring modelling has some efficiency ... true; maybe that's the only other one ... the rest, leave it at the country level. And there are certain elements where you can say that centralisation of coding can happen, where it makes more sense from an efficiency perspective; but the running of that still goes back to the country and they take full ownership of that. You get what I'm saying? It is not offshoring. Because you want efficiency and faster turn-around, sometimes it makes sense to centralise the coding. Well that's based on the assumption that your data elements are all the same; and that's why you can centralise. And this is where we are at today. The data elements have converged in that

sense. So you can do that. But before, it's very difficult. At that time in 2008/2009 it's very difficult to centralise coding. Because everything was so diversified.

Eric   Eric thanked PAR6 for this time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections. And to indicate areas which are sensitive and should not be re-produced.

Additional questions emailed and received on Mar 3, 2017

Eric   What are the performance goals (i.e. for performance appraisal / annual performance scorecard) that your Analytics function carry?

PAR6   The performance goals that my function carry includes:
1. Country & Franchise Goals consisting of Country Revenue/Expense/EBIT, Efficiency Ratio, Net Promoter Score, Compliance Goals, Data Governance Goals.
2. DM Executional & P&L Influence Goals like on Business Drivers such as Instalment Loan Sales, New Accounts, New Customers, Digital Transformational goals; Instalment yield.
3. DM Analytical Projects – SIP [Sales Incentive Plan] Insights, Portfolio Insights, Acquisition Analytics; Location based analytics etc.
4. DM Specific Executional Goals like Campaign Productivity, COPS Automation, MIS automation; DWH UAT Completion goals.
5. Own Talent related goals - talent development, VOE score etc.

Eric   Do you feel that these performance goals are aligned to your Analytics function's capabilities?

PAR6   About 80% are aligned to my responsibilities and most are collaborative and shared in nature. The remaining 20% are usually country/franchise related and usually DM is only a minority player in the scheme of things.

Eric   On what processes does your Analytics function have approval authority on?

PAR6   Analytical ones - P&L related to Pricing, Min Due, Payment Hierarchy, Instalment Sales Volume, SIP related decisions, Campaign Monthly Rollout via Campaign Optimization / Campaign Scores; Data Warehouse and Data Governance Related; Leads Management.

Eric   On what processes must your Analytics function be consulted on or provide its concurrence?

PAR6   The above ones.

Eric   Does your Analytics function own any policies?

PAR6   Customer Contact Policy (Campaigns Related); Data Governance and Data Quality Policies (DM Heads now are all Country Data Governance Officers in Countries).

Eric   Is your Analytics function formally consulted on all business initiatives that require data?

PAR6   Yes, mostly around 98% of the time. It has risen to this level in recent times because of realignment of functions limiting usage of data access to only areas like DM, Risks, Credit Ops (Btw, DMU has totally disappeared (people removed) from the Org structure). Because of this, lately (rightly and wrongly) we have also been consulted even on matters pertaining to regulatory, Data Governance and Regulatory related MISes.

Participant Code	PAR7
Title	Country Head of Analytics
Organisation Code	ORG5
Date	January 9, 2016
Legend	[xxx] implies redacted due to participant confidentiality

Person	Transcription
Eric	Eric thanked PAR7 and explained the BI&A organisation design research.
Eric	Can you describe your experiences and background, and how many years you've done analytics?
PAR7	I studied Economics; I had my Bachelor degree in China. Then I came to Singapore to pursue my PhD. My first job was as an analyst in the Collections department of ORG3 (Singapore). That was my first job. And I stayed with the Collections team for about 3 years. Then I joined ORG3's Risk team as a scorecard specialist; my role was to coordinate with the India scoring team and to act as a bridge between them and the local [Singapore] Risk team; to help the local Risk team get what they want out of the scorecards. I worked in that role for 2 years, and then left to join ORG5. I've been at ORG5 for 4 years now. So in all, I've worked a total of 9 years in analytics.
Eric	What do you do in ORG5?
PAR7	I initially joined as a modeller. At that time, they didn't have a scorecard strategy for acquisition, so my role initially was to set up the scorecard strategy for the Singapore credit card business. The structure of the department follows the 'monoline' structure. Under our head of department, we have all the functions, from approval to collections. In between is Portfolio Management, Marketing, Usage ... all these business functions. So my current role in Analytics supports all these units. We have different business problems - e.g. how to improve the approval rate, how to reduce the flow rate on collections, how to design a new campaign that leads to higher ROI. These are the kinds of problems I work on.
Eric	It's very broad.
PAR7	Yes, it's very broad. It's from the beginning to the end [across the product life cycle]. It's uncommon in other organisations that the analytics team get to work on such as broad spectrum.
Eric	But is it all the domain of Customer Analytics? Do you get involved in problems such as improving the call centre productivity or the turnaround time in Operations?
PAR7	I don't get involved much in the establishment of the process. I don't get involved much in process optimisation and process engineering. Although I may get questions like how to reduce the call volume - we have a lot of customers calling in requesting for fee waivers, then should we proactively waive them to reduce the calls?

Eric	Ok. So it's very much about understanding customer behaviour, or product behaviour analytics. Whether it touches the Risk side, the Collections side, the Marketing side. It's the customer's life journey through the bank that you would be responsible for?
PAR7	Yes. But mainly within the Unsecured Lending domain.
Eric	Can you describe the reporting structure in ORG5? Who do you report into? Where does the team sit?
PAR7	Currently we work under the Cards and Personal Financing department. Like I shared, it's a monoline structure, so all the business units, the operational units, the analytical units, they all sit under the head of department. We report to the head of department. And we sit side by side with them.
Eric	When you say "sit side by side", do you mean physically?
PAR7	Physically, we are all on one floor.
Eric	The entire team?
PAR7	Yes, the entire team. But we are a small team. Including me, there are only 7 of us [Analytics].
Eric	Ok. And that covers the campaign, the reporting, the modelling, the analysis?
PAR7	Actually we have another 2 people doing the regular reporting. In Business Planning.
Eric	In Finance?
PAR7	Something like Finance. It's P&L management.
Eric	So they would be responsible for product profitability reporting?
PAR7	No, the profitability reports would still be from my [Analytics] team. For the 2 reporting guys, they handle mostly the General Ledger type reporting - financial KPIs.
Eric	Because they have access to the Finance systems?
PAR7	Yes. But in terms of revenue per customer, profitability by product type, that comes from us.
Eric	So this team that you have, which reports into the head of Cards & Personal Finance?
PAR7	Yes.
Eric	Do you have any other matrix reporting? Is there a Regional Analytics head that you matrix report into?

PAR7　　　At the regional level, we do have an Analytics function. Now they have started to discuss about the regional operating model. Which means the regional team is now looking to help out the countries. Currently, each country is doing their own analytics. But now, the countries try to leverage on the infrastructure, and data knowledge. So in some sense, I do have a dotted line [reporting] into regional.

Eric　　　Across the countries today, are your Analytic teams separate? Within the country. For example, you support the Cards and Unsecured Loans. And somebody else supports Wealth Management & Deposits. And this model of supporting each vertical line of business exist in every country that ORG5 is in? So, in Malaysia, it's also like that?

PAR7　　　Yes.

Eric　　　You don't have a Country Analytics head?

PAR7　　　Yes, they have I believe. The regional analytics team reports into Group Digital Banking & Analytics. In that sense, they've centralised the analytics team. But in each business … for example, I have a counter-part in Malaysia Cards team under [xxx].

Eric　　　Your counter-part would be someone in Malaysia who is also having responsibility for Cards & Unsecured Loans?

PAR7　　　Yes.

Eric　　　And similarly, the Analytics head for Wealth Management & Deposits has a similar counter-part in Malaysia?

PAR7　　　Yes.

Eric　　　But in Singapore, there is no single Analytics head? In Malaysia, there is no single Analytics head? That reports into a single Regional Analytics head? So even the region would have a separate world for [regional head] in Cards & Unsecured Loans, and another world for Wealth Management & Deposits?

PAR7　　　True, true.

Eric　　　So this vertical separation of the Analytics goes all the way up to the region as well?

PAR7　　　Er…

Eric　　　For example, what products does your regional boss cover?

PAR7　　　At the regional level, it's centralised. The regional team is based in Malaysia, and we have a huge deposits and savings customer base there, and so they wouldn't have a separation of Cards and Deposit because of the need for bundling and cross-selling; otherwise they will miss out the big picture. That's why at the regional level, their strategy is a customer-level strategy, across the products. But here in Singapore, our Cards customer base is much

bigger than our Deposits & Savings customer base. So if we only rely on Deposit & Savings information, it won't be very useful.

Eric   Regional office of ORG5 is based in Malaysia?

PAR7   Yes. KL.

Eric   In a sense, you are an offshore location for the head office?

PAR7   Yes, you can think of it that way. I mainly still report to the country head of department.

Eric   Ok. In the country-level reporting, can you share with me how your [Analytics] team is organised? What are the backgrounds and skillsets?

PAR7   We have 7 people including me. Under me, there are 2 teams. One is the Campaign Management team - they are SAS users; they help to execute the campaigns. ORG3's Decision Management also had a similar team, right? They run campaigns. Each month, they run 50-100 campaigns. They also take care of the fulfilment. They also take care of the customer communication such as SMS 'blasting' and emailing. The people in the Campaign Management team are quite systematic because it's like an operational job. They are SAS users; very good at programming. The other team are the Analytics people. They support the Approval Unit, Collections, other business units. There are 3 of us in the Analytics function. Our objective is to solve the business problem - e.g. how to simulate the impact of a new product ...

Eric   So when you launch a new product, you have to understand who is your target market and that sort of thing …

PAR7   Yes. We also do certain [data] automation for them [the business]. Because our IT is based in Malaysia, and they are not able to respond to business demands in a timely manner, so we also do certain automation for the Operations team.

Eric   You mentioned your IT is in Malaysia. So your data centre is also in Malaysia?

PAR7   Yes.

Eric   Obviously you participate in management meetings with PAR11 [head of Cards & Unsecured Loans in Singapore].

PAR7   Yes.

Eric   [country head for cards and unsecured loans] reports into a country head for ORG5 … do you participate in meetings involving the country head?

PAR7   I don't attend the senior management meeting, but we have our regular department session with the country head separately. So that occasion is there.

Eric	What kind of meetings do you have with the country head?

Eric   What kind of meetings do you have with the country head?

PAR7   We provide him a monthly progress update on the various initiatives, what the issues are and at which stage of issue resolution we are at. Anything worth highlighting.

Eric   This is once a month?

PAR7   Yes, once a month.

Eric   How do you define Business Intelligence & Analytics? While you've been doing this role … interestingly, you started in Collections Analytics, and you've done Risk Analytics, and now in some sense, you are in Marketing & Customer Analytics. Different people interpret Analytics in different ways. Some people may define is as just campaigns, or reporting or modelling. How would you define as it is relevant to you?

PAR7   In my opinion, there are many levels to BI&A, and it depends on the organisation. From the lowest level of Reporting - static reporting. Another level is the capability of handling adhoc requests. Another stage is about problem-solving for the business; sometimes the business may not know how to resolve the problem, what the problem is about, is it well-defined, etc. If the BI&A team can advise them based on what they see from the data, then from a data perspective, it can help the business.

Eric   That's how BI&A looks to you. It doesn't matter if it's solving customer problems. Risk problems, or Operational problems …

PAR7   It doesn't matter. The domain is more like, "What's your target?" If you have credit risk as your target, then it's one type of problem. Another type is about response rates. To me it's all similar.

Eric   Do you think all the analytics should be centralised? Because you are one of those few individuals who has done Collections, Risk, and now Marketing/Customer. In most banks, Risk, Collections and Marketing/Customer analytics is all separate. Do you have an opinion as to whether these should remain separate or they should be centralised?

PAR7   It's a difficult question. I think it will definitely help if people have different exposures to different [analytical] functions. If the people start in Marketing [analytics] and only focus on Marketing, then something is missing. If they don't understand both sides, if they don't understand returns on a risk-weighted average basis, then they are only solving the problems partially. It's good to have exposure to other functions, but ... people cannot have too many objectives ... they still have to have a focused function.

Eric   So it may not make sense to put it all in a single [Analytics] function?

PAR7   Yes. Because if there are too many objectives, then you might not achieve anything.

Eric   What does success in BI&A mean for you? How do you define success?

PAR7   To me, success must be quantifiable. There must be a clear data-measurable definition of the success. It cannot just be about rolling out initiatives - to me that's not success. From the beginning, you have to design the 'thing' and then if you roll-out and execute exactly as planned, tracking the 'thing' and measuring the incremental difference.

Eric   But how do I say you have a good BI&A team vs some other bank's? Or versus other internal functions? How do you say that you are successful? What do you use to differentiate yourself?

PAR7   I'm not saying I'm a successful BI&A function, but one of the things that can differentiate is the ability to quantify the impact of analytics. In certain organisations, analytics cannot be quantified. For them, their success may depend on networking and managing people's perceptions. To me, the work of an analyst must be quantifiable and measured. Of course, that's the ideal case.

Eric   So what would you measure that would define success?

PAR7   Response rate can be one such measure. When we design a campaign, we would have a test and control groups so that we can measure the difference in responses statistically.

Eric   So success would be defined at the individual project level? Each project would have its own quantifiable outcome?

PAR7   Ideally, yes. But in reality, we don't always have the resource to do all that.

Eric   So in your opinion, do you think you are successful?

PAR7   In my opinion, I was not successful last year. But in the year prior to that, I was successful.

Eric   Why or why not?

PAR7   Last year, we spent most of our efforts on dealing with regulatory changes - once you have a big dramatic regulatory change, everything becomes different. So there's no way to compare what's going on; because it's uncertain to us as well. We don't know whether the policy change will have a positive or negative impact to us. From what I can tell, it is having a negative impact to us. That's why last was not a successful year for us.

Eric   The business may or may not be successful, but as an Analytics team, are you successful? Economies or policies can change and business can suffer, but it doesn't mean that the Analytics team was not successful.

PAR7   I see. Honestly, I don't think I was very successful last year. Firstly, I'm new in the role. And the people [analysts] are not much aligned to what I'm thinking. There were many things I wanted to achieve but in the end, were not achieved.

Eric   So let's talk about people [analysts]. Maybe you can talk about it in terms of the kinds of business problems you get, and whether you feel your people

have the necessary skills to solve those kinds of problems. From a Campaign and Reporting perspective, I understand. The business will come to you to request for a new campaign or a new report ... but beyond that, the kinds of problems that you talked about previously, like launching a new product, understanding how the market and economic changes are impacting the business, etc. If you could describe the kinds of problems your Analytics team would typically face and how you go about solving them.

PAR7   So we have a few ways of solving what you call an 'equivocal' problem …

Eric   So what would be an example of an equivocal problem that you recently encountered?

PAR7   Recently, we were working on refreshing our product features. It will be launched and announced later this month. We did the planning and preparation last year, and we had the question, "If we were to give this much benefit to the customers, will we be endangering our business?" Because right now, the competitors are all giving high rebates, and so, can we afford to follow the trend? Is it affordable?

Eric   Why would you say this is an equivocal problem? Would it not be an 'uncertain' problem - if the problem statement was, "How can I maintain my customer benefits competitively but not increase my cost?" Can having more data resolve this problem? Are you thinking this is an equivocal problem because there are many different interpretations to it?

PAR7   First of all, the feasibility of having the data is not there - it's infeasible to get all the data on how customers would respond, because there are so many … firstly, whether the customer will find it attractive, and it depends on how you communicate to the customer, and whether the customer is aware of the benefits ... there are many uncertainties there. I think those kinds of data are not available to an analyst. I don't know whether you would define it as Uncertain or Equivocal ... but how we are thinking about the problem and what we should do about it can also be different from the way management is thinking about it. For example, if you want to save expense, then we may set up a difficult criterion for customer benefits, but then management may respond that it is too difficult and would create confusion ...

Eric   And management has not been explicit in its conditions and criteria?

PAR7   Of course not!

Eric   You don't know what's a good or bad recommendation for management?

PAR7   No, I don't. So it's very difficult. We have to prepare multiple plans or scenarios; we have to make our simulation very flexible so that we can tweak it and get quick results based on management's inputs.

Eric   Because management is also trying to figure out what the proposition should be?

PAR7   Yes. When we first showed them the data and analysis, their response is this is too 'dangerous' for the business, this was too difficult for the customer. So

we have to iterate through many different possible solutions. So that was a recent example.

Eric   So how you went about solving this problem, if I were to repeat what you said, was to create some kind of simulation engine …

PAR7   Yes.

Eric   And then based on the conversations back and forth, you realised that each time you presented, management had a certain opinion and you were forced to change [your assumptions and approach], and so after, you figured it would be easier to make a simulation engine to use for discussion ...

PAR7   Yes. We had to plan all the scenarios, and from there derive the proposal. But sometimes they say that the scenarios are not enough, so we have to make the simulation very flexible.

Eric   But this simulation is after you learnt from this back and forth with the management?

PAR7   Yes.

Eric   When you first approached the problem, you didn't think about the simulation. Only after a few rounds?

PAR7   Yes, only after a few rounds … it felt very painful. Then we start planning in advance - anticipating the possible angles that the management can come from, and create the necessary parameters in the simulation engine to accommodate for it.

Eric   So would you say that by creating this simulation engine, you are trying to reach convergence of ideas?

PAR7   True. But finally, no one really knows what the real customer response to the recommendations would be; it's still a guess.

Eric   Noted. But it was about getting agreement that this was the scenario that everyone would go with.

PAR7   Yes. And this would be the best recommendation based on our best knowledge.

Eric   Do you feel that your Analytics team today has the ability to do these types of ambiguous or equivocal problems well? Or they struggle?

PAR7   They struggle. Even I struggle.

Eric   Why do you struggle? What are the issues that you struggle with?

PAR7   I needed the people to think in alignment with me. I have ideas, but I don't always have time to execute on the ideas. I need some people who can align to my thinking and help me to do things carefully … and if there is an issue, to highlight to me. I have yet to establish that kind of relationship with my

team. Sometimes I'm dragged into discussions on technical issues and I feel very stressed - because I gave them [my analysts] a timeline, and they said they are committed to doing it, but when it comes nearer to the meeting dateline, the results are still not coming out, or coming out with some errors, then I feel, "Sigh. I have a meeting with management. What am I to do?" So that's my dilemma. There have a few times I had to come back over the weekends to do it myself. So that's the situation.

Eric   But is it because you are not communicating effectively to the team?

PAR7   It's possible. But I believe in 'learning by doing'. When I take the instructions from management, I also don't have much idea [on how to solve the problem]; it's only through the journey that we learnt how best to respond. I'm not sure if other organisations experience the same, but many times when management comes with a request and tells us to do something, and we respond, the response is not ideal and they change their minds and may pick a simpler solution based on their experience. I sometimes ask management various questions to get further clarification on the problem, but not everyone goes the extra mile.

Eric   So if I may repeat what you said … today when management comes to you with a problem, you have a sense whether the problem is equivocal or not; you have a sense that this problem may have a different interpretation …

PAR7   Yes.

Eric   And despite what management tells you, different people may look at the problem differently. And you have a sense that if you simply did as they ask, they will not like the final response or recommendation?

PAR7   Yes.

Eric   Because actually, the problem is a bit more complex than what they say.

PAR7   Management will usually have questions like, "Are there other areas that you have looked into and considered?"

Eric   Although they didn't tell you initially. So you have learnt over time to anticipate certain types of problems that are more complex.

PAR7   Yes

Eric   And the sense I'm getting is that the people who report to you have yet to pick up these skills?

PAR7   Yes.

Eric   So while you have the ability to think broader about a problem, your people don't yet have that experience to do that.

PAR7   Yes. Sometimes it's not their fault also. Let's say I assigned a job to one of my analyst, and sometimes, the analysis results in an unexpected finding, It's obvious we would need to drill in; we can't simply submit the findings to

management without a deeper explanation. It's obvious management will ask why. But my analysts would wait for me to review the analysis and instruct them to go deeper.

Eric   They don't have a sense of asking themselves those questions?

PAR7   Yes. People need to be curious enough.

Eric   How do you train them? If you are saying that there is no way to fully explain the nature of the problem - e.g. solving the problem of maximising customer benefits while minimising cost, and when you do this analysis, many other things may come up that were not expected or not intuitive; the data may say something different from what you thought ... and a good analyst would generally know what to do with that, and will drill further. Because they know that if they showed this data to the client or the business, for sure, the business would ask why, "This looks weird. Why did you not look into it even though I didn't explicitly ask you to; it should be common-sense." What mechanisms can you employ to have your people develop these kinds of skills?

PAR7   What I want to improve is … I want to them to feel that the work is interesting. They must have a feeling of achievement when they do something correctly. When they do something good, I have to always highlight it. This is to reinforce the believe that if they are proactive and it results in something meaningful for the business, then it's good for them and me. I want to build that kind of culture. So far it's been challenging. The people always have excuse that they are busy and such ...

Eric   So the people can actually do it, but they don't have enough time?

PAR7   Sometimes they have to compromise.

Eric   Do the analysts sit and discuss with the business all the time? If I look at data and it seems a little odd, I would have the initiative to go and drill in to get some answers. Can this be trained because they are close to the business? So they think like business people because they are seated next to them and they understand the business problem? For example, with you, PAR11 may just have to express the problem in a simple sentence but you know that it's never that problem and it's a lot more other things ... but because you see PAR11 every day and you are part of his management team, and you experience his challenge. Would your people not have this same exposure?

PAR7   Sometimes certain things are my fault. I had wrongly assumed that everyone knows what the problem is, but actually they don't. So communication is important. So I want to encourage them to attend the department meetings.

Eric   You feel that that is very important?

PAR7   Yes, because in the department meeting, different units will highlight their issues and the challenges they are facing. Although it may be time-consuming, it will allow them to develop context to the requests they get from the business. "Ah! This number may be linked to the issue that they highlighted in the meeting." That will help them, but it's time-consuming.

Eric	You used the word 'context'. So, the department meeting helps the analysts to create context to interpret the data better?
PAR7	Yes.
Eric	How important is face-to-face for these kinds of meetings? Can they be conducted via teleconference or video conference?
PAR7	Personally, I feel that if the objective [business problem] is not very clear, then teleconferencing and tele presentation is not effective. Unless it's something like walk-through, sharing … it's one-way … I share with you and you ask me questions … then teleconferencing would be ok. But in these department meetings, people are like in a coffee shop having a discussion - there are many conversations happening and it's dynamic. If A ask a question to B, it may trigger C to join in the conversation. So it's very fluid and dynamic.
Eric	Let's talk about 'centralisation'. Today you have separate analytical verticals. What if you centralise all the customer-marketing analytics teams into one. Does that kind of centralisation make sense? Would the analysts have more context? Would the centralisation enable them to understand business better and therefore, deal with these kinds of complex problems better?
PAR7	In the consumer environment with everyone talking about the single-customer-view, I think it makes sense. Because your competitor will all move into that direction and it has to mean something. So if we serve the customer and analyse the customer only from a Cards domain, then we may not have the full picture of the customer, and we may not maximise the revenue potential from the customer. And if we have to deal with attrition on a product-by-product level, there would be a lack of synergy. But then, if we had a dedicated analytics team for a single product, then they can go very deep, which is an advantage.
Eric	Going deeper means I can solve even more complex problems?
PAR7	Yes. Because if you have multiple products, you may not zoom into very deep levels. That's my feeling, but I don't have enough experience to speak to it.
Eric	Let's talk about offshoring then. Today, you are a Singapore-located bank of a Malaysian bank; headquarters is in Malaysia. So ORG5 Singapore is an offshore subsidiary of ORG5 Malaysia. There is stuff that happens in Malaysia, like IT, Data Centre and Operations, that supports Singapore. So in some sense, they are centralised into Malaysia. Would it be better to have the analytics team supported out of Malaysia where you would have more resources? Today you have a small team. What if you had to double your team? Would you consider putting the team in Malaysia to support Singapore? Because that's where the headquarters is, that's where the people are close to the Group CEO, close to the Group IT; they can get a lot more resources and all that.
PAR7	You mean move the Singapore analytics team back to Malaysia?

Eric	Or you could have half of them in Malaysia. If you had to double your team, you could put the additional staff in Malaysia.
PAR7	There's no constraint on cost?
Eric	There is always a cost consideration, but rather if you wanted to achieve the best outcome (say net revenue growth) for doubling your team, would you put the entire team in Singapore? Given the fact that your headquarters is in Malaysia.
PAR7	I think I would still recruit the talent locally, and put them locally [in Singapore].
Eric	Why?
PAR7	For a small bank like ours, we don't hire fresh graduates. Instead, we acquire experienced talent from other mature competitors. So the talent is familiar with the local market, the local business conditions. I would have the talent in Singapore because they know Singapore better, and they also understand the competitive landscape.
Eric	A credit card is a credit card. It's a very well-established product. One can argue that credit card analytics is 70-80% similar. So why not put a team in Malaysia where, if part of your challenge is infrastructure, if part of your challenge is trying to understand the management thinking around the strategy of the business, then wouldn't that team in Malaysia be closer to senior management? Closer to HQ?
PAR7	At my level, 70% of the problems are locally from my head of department. So if you say there are additional resources available to answer questions from the Group CEO, then of course, having the resources in Malaysia would be better. But if they are going to answer my head of department's questions, then definitely they have to be here [in Singapore].
Eric	What would be the difference if you had the team in Malaysia? One of the things I heard you say is that they [the analysts] need to understand the local context. Because they have experience, they understand the competitors, they understand the Singapore market. Other than that, what other challenges are there? Can I take a Singapore person, let's say yourself, who has experience in the Singapore market, and I move you to Malaysia and have you work out of Malaysia, because you are closer to HQ there, and you can support Singapore from there? Would that be ok?
PAR7	I think it will be difficult, as my client is still in Singapore. I feel certain things really require face-to-face dialogue. If people are based far away, say in a different city or different location, then any request that comes will be processed like a routine. You would have to put up a request formally, send me an email or perhaps schedule a meeting with me. So it becomes a routine. Something like a standard process - you give me the requirements first, then we make an appointment to have a conversation - step by step ... for me, it's like we will have steps to follow. But if we are here [in Singapore], the

	business can call me into the room and say, "What's this? I can't understand it. Explain it to me."
Eric	Let me flip the problem around. We tend to think about Singapore and Malaysia being small countries. If I were in China, to support Beijing out of Shanghai is like supporting Singapore out of Malaysia. But it's still the same country. If I have a resource in Shanghai supporting Beijing, would that be the same? It's just because we think in our minds that Malaysia is not like Singapore. But China is so big. Every state feels like an offshore because of the distance.
PAR7	What I heard is that China is building the high-speed train network. Why do they need to build this? If they can work via telecommunication, why do they need to build this train network? Why is the train from Beijing to Shanghai always fully packed with people? There must be some reason right. It's like why you [Eric] would need to fly to KL or fly to Jakarta.
Eric	Ok, I get you. Now, if you have the opportunity to re-design your analytics team, would you do anything differently? What would you do differently?
PAR7	Re-design?
Eric	The team you have today is inherited from [xxx] [former ORG5 analytics head]. Yes, you have some authority to modify over time. But let's say you were new, and whether it's ORG5 or any other bank, and you had to set-up and design an analytics team that is going to be effective, and is maybe going to be a good strategic partner for the business which is probably what you want to try and achieve, how would you design this analytics team, and how would you design it so that you can also scale it?
PAR7	Firstly, I don't have the experience to build a team from scratch. The first thing I need to do is call all my friends! "Do you have good people?" I would look for similar skillsets and identify their strong points. If we can't train them or improve their weakness, then I would assign the jobs that matches with their competencies.
Eric	Eric thanked PAR7 for this time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections. And to indicate areas which are sensitive and should not be re-produced.

Additional questions emailed and received on Feb 21, 2017

Eric	What are the performance goals (i.e. for performance appraisal / annual performance scorecard) that your Analytics function carry?
PAR7	Just a brief summary on my 2016 KPIs: A) We share departmental core financial KPIs with a weight of about 15%; (PBT, CIR and RAROC) B) As the control party of sales leads, our KPIs include credit approval metrics like approval rates and loan interest rates. We are also tasked to meet budget for marketing cost by optimizing returns from leads.

C) For campaign and incentive management, we are measured by time lines and error rates.

D) The team need to ensure successful implementation of regulatory guidelines or credit policies that are relevant to our processes.

E) Maintain or Improve Internal/External Audit Rating.

F) Project based initiatives utilization growth, RWA reduction, etc.

G) Other analytics requests are measured on qualitative basis, e.g., meeting stakeholders' requirements.

H) Data infrastructure enhancements

Eric   Do you feel that these performance goals are aligned to your Analytics function's capabilities?

PAR7   The goals are aligned to analytics function's capabilities in some ways. But feel that a lot of resources are drained for compliance and supporting manual work-around due to insufficient IT capacity.

Eric   On what processes does your Analytics function have approval authority on?

PAR7   We don't have Direct Authority. But certain processes require concurrence from the team, e.g. pricing deviations, launch of campaigns & products, IT project cost benefits analysis.

Eric   On what processes must your Analytics function be consulted on or provide its concurrence?

PAR7   As shared above

Eric   Does your Analytics function own any policies?

PAR7   Yes a few. For example, contact policy, bureau management, etc.

Eric   Is your Analytics function formally consulted on all business initiatives that require data?

PAR7   Yes we are involved.

Participant Code	PAR8
Title	Country Head of Analytics & Insights
Organisation Code	ORG6
Date	January 12, 2016
Legend	[xxx] implies redacted due to participant confidentiality

Person	Transcription
Eric	Eric thanked PAR8 and explained the BI&A organisation design research.
Eric	If you could share a little about your background and experiences, and the number of years you've done analytics?
PAR8	Alright. Masters degree. Spend 20-odd years in the industry - 10 years in UK with a Retail Financial company; on the supplier/client side and quasi business-to-business. After working for an internet bank, moved over from the UK to Singapore where I worked for 2 Asia-Pacific wide banks and a global insurance company. That was another 10-year period of my life. And then moving down to Australia, having experience right across Asia. In Australia working for an international bank and one of the Big 4 in Australia and probably one of the biggest banks in the world - and that's the last 4 years; working as the Head of Analytics, managing the teams, being a consultant to a really large-scale team.
Eric	I'm using this term 'Business Intelligence & Analytics' as a catch-all. So what does BI&A mean to you or your company?
PAR8	In ORG6, the team is called 'Analytics & Insights'. So it's not BI. But the delivery mechanism of what we do, for which I articulate falls into the BI&A category. Ranges from delivery of Reporting through to Strategic Analytics to strategic pieces of cuts of data, through to Predictive Analytics as well. So basic or 'canned' reporting that happens on a regular basis through to the other end of the spectrum which is statistical modelling and so on. Within the teams that I run as well as worked in, that's been more extensible in terms of focusing on the delivery of analytics to front-lines or to channels, through campaigns and being able to drive communications to customers. So Analytics falls into that part. I'll probably call that Analytical Marketing ... as a stretch into the Marketing world; for below-the-line communication - internet, email, SMS and so on. Does that help?
Eric	Yes, that helps. But there's no right or wrong actually.
PAR8	Yes, but it's one of those questions that is quite hard to answer.
Eric	But the reason I ask is that it gives context to the answers you will provide later; because it does colour that perspective.
PAR8	Sure.
Eric	Next question: who and which function does your Analytics & Insights team report into and why?
PAR8	Within ORG6, there are 2 over-arching functions. We have Retail - which includes Distribution, all of the branches, the relationship managers, the call

centres. We don't report into that. We then have another area called Products and Marketing. That includes retail products like mortgages, credit cards, savings products, and also payment mechanisms, and includes the Marketing team and the Analytical team. So I report into the managing director of Products & Marketing, which is a 600-700 strong team; basically providing content for customers and packaging that content. We have a 3rd area within the organisation which is Technology which is essentially a centralised ORG6-wide group competence, and is not Australia region specific ...

Eric   But it's [Group Technology] is in Australia?

PAR8   It's in Australia, Bangalore and a number of areas … but let's not touch that.

Eric   And within the Consumer space only?

PAR8   No. We also have Corporate & Commercial Banking. We also support, but don't have a direct line engagement, with the team. Wealth is a separate business. A bit like AIG was to ORG3. But it's actually owned by ORG6, So one half was bought by ORG6. So what the Product & Marketing team do is they support Retail Banking, Cards, Wealth, and Corporate & Commercial.

Eric   Ok. So do you get into stuff like Sales Analytics, although it's technically not products?

PAR8   So that's Distribution. The Analytics team supports the delivery for the Sales & Distribution team; but they get involved in what the definitions look like. So that's where there's a historical artefact - there's what the Sales & Distribution team wants - we want to integrate all these data from right across the bank - everything about customer. And we are the only place in the organisation that integrates 60 different systems in order to produce these reports.

Eric   Do you participate in senior management meetings? And by senior management meeting, I mean the meetings involving the CEO and his 1- to 2-downs in their regular meetings.

PAR8   Yes. I am part of the Products & Marketing leadership team. So on that leadership team, we have the general manager of Cards, the general manager of Mortgages, general manager of Savings & Payments Capabilities, general manager of Marketing and so on. So I'm part of the general manager team. That team also participates in meetings with the managing directors of Retail Banking and Corporate & Commercial. I also participate in group-wide conversations - I'm on a number of committees across the organisation, such as Enterprise Data Governance, and various other conversations that cut across the organisations - Retail Bank, Risk, Technology.

Eric   Are you satisfied with the current reporting structure?

PAR8   I feel it's the right reporting structure.

Eric   Any comments on why you feel that way?

PAR8   I feel that way because the strategy around how the customer experience and bank experience would be defined is in that group of people. So it is as close as you can get to participating, directing and influencing the customer-banker experience, and therefore, bringing analytics alive and into the organisation. That's meaningful right across the board, whether it be the relationship manager or the customer.

Eric   So how long has your Analytics & Insights team been established and operational?

PAR8   I think about 4 years ago, it was centralised. And then it went through a de-centralisation process and it was smashed together again about a year before I join. I inherited a relatively centralised team. Subsequent to me joining, more parts of the team have been added to me. It's not a journey we've completed yet, but there is a relative consistency and direction that we are going around centralisation of competence. There are still pockets of analytics teams that sit within the Cards general manager, the Mortgage general manager, or the Risk team, or other teams. And they will assist, because of the need for, as you say, equivocal analytics to happen in the organisation. And to be honest, them having ownership and turn-around and priorities, it makes sense for them to have 2-3 [analytics] people in their team.

Eric   But prior to the centralisation, was it also called Analytics & Insights, or only with the centralisation did the function then adopt this name?

PAR8   I don't have the history. I believe it was smashed together about 2 years ago.

Eric   Ok. Clearly, in the lines of business that you support, it's the entire suite of products, the marketing, the customer experience, sales & distribution. Are there particular businesses that you don't support?

PAR8   The activities that I don't cover are Fraud, Risk (which includes Collections). So I don't do those various types of analytics. But I do cover analytics that supports Marketing, Sales, Products to an extent, and Pricing to an extent.

Eric   And cuts across Consumer and non-Consumer businesses?

PAR8   Yes. So when you say 'Consumer', you mean the customer is an individual? Then yes. And also Corporate & Commercial. So I have a Corporate & Commercial analytics team as well.

Eric   Could you describe how your Analytics & Insights team is organised?

PAR8   This is going to be a long answer. There are essentially 8 different teams.

Eric   You have 8 one-downs reporting to you?

PAR8   Yes. We have a 'Spans & Layers' principle in the organisation. Where you can have no more than 8 direct reports and 3 layers deep. And these are principles that Bain or McKinsey came up with. But it's important that you understand that. In organisation design, there are no more than 7 down from the CEO of the overall company.

Eric   OK.

PAR8   There are 8 teams within my overall structure. And we can add on to that in a number of ways because of 'project teams'. I'll come to that in a second. So the 8 teams includes everything from … essentially the wings of my organisation - Research & Development through to Prototyping and then Industrialisation and the Core. If you look at the organisational structure, one end of the structure starts from the data perspective, and the other end of the spectrum starts from the analytical perspective. And they converge in the centre. From the data perspective, and I'll start there, I start with Capabilities Development. And Capabilities Development is essentially a group of guys who can manipulate data and build data assets for other areas of the team to leverage. So they might build a data asset that defines how a customer looks like and has all the customer attributes, and across the customer's history or today. And that data asset will be created and made available for use in campaign development or front-end analytics or something else. And the type of skillset they have include Teradata, Oracle or SQL skills.

PAR8   The 2nd team is Information Leadership. Information Leadership basically manages the platforms that we have and ensures that the platforms are suitable and sustainable for the rest of the team. So we have some focus in terms of control around the platforms; I've got one person dedicated to that, and I've got 2 people dedicated to making sure people have the right access to the databases, with their passwords and system access and all. Within Information Leadership, I also have Forensic Analytics. And Forensic Analytics is looking at the Terms & Conditions that the customers have and whether we are actually applying them correctly based on the processes that we have and the way we actually deploy them in the source systems. In other words, if I tell you as a customer that you should receive a fee of this much based on this type of transaction, are we actually applying that in the back-end in all instances? So Forensic Analytics would do heuristics kind of search for whether these problems exist or don't. The outcome of that will then feedback into the Capabilities Development to do remedial activities if there are systemic issues or uploads into the system to fix it. Anything that's build in Capabilities Development will move into Operations to run. So that frees the creative space that the Capabilities Development guys have to build new stuff. So they build it to certain level of standard and as soon as it works, they move it into Operations, and Operations just run it. This Operations team is the 3rd team and is quite sizeable. I'm trying to squeeze that team down - it should only be about 4-5 people ... I'll get to the number of people I have in my team later.

Eric   Will this Operations team have elements of Reporting or Campaigns?

PAR8   They run around 1,000 reports on a monthly basis, they run campaigns, they run the whole shebang! They run the suite of schedulers, making sure they are all timed correctly, they are optimised, when the jobs run there is check at the end …

Eric   They are not the ones developing the reports which are built by the Capabilities Development team?

PAR8	The Capabilities Development team does not build the reports. They just build the data assets. Those data assets could serve analytics, it could serve a Business Objects [cube-based reporting] problem or a Qlikview problem, or they could build it for the campaign team. They just build these data assets. Once they build these data assets, and they make sure they are indexed correctly and have the right quality in terms of data lineage and so on, and then pass it over to Operations to run.
Eric	OK.
PAR8	The 4th team is BI [business intelligence]. This is the reporting team. But it is a reporting team with a difference, because what they do is they basically implement a Management Information 2.0 model where we are federating the data assets built by the Capabilities Development team to allow other departments to build their own reports. But instead allowing these departments to go completely wild, they are not allowed to publish these reports. So the BI team is working user experience design, governance and controls, publication. Basically managing the 'apps store'. So it's a very distinct team - we don't suffer from bandwidth issues for that team because of the focus that they have. So they'll work on the building of reports if they have to, but they will tend to get the user to rapidly and agile-ly build the reports themselves
Eric	They are trying to move it self-help; enabling the underlying foundation of the self-help?
PAR8	Yes. So they make sure that the universe is correctly configured in Qlikview and the business users can go right in and build their own reports. And then we elevate that team to a different level of governance, user experience and problem solving.
Eric	OK.
PAR8	Then I have the Campaign Innovation team. And this team basically uses the campaign tools and the data assets, and the analytical assets that have been built, to build new campaigns. And they work with the business and the Analytical Marketing team which I will get onto later. They make sure the creative content is merged correctly with the leads. So their focus is purely on the design of new campaigns, not the running of those campaigns. The running of those campaigns moves back into the Operations team. So they build for multiple regular use - they build triggers, they build treatments, they build events, and campaigns. So they use tools like Unica, tools like Detect (which is like TIBCO but not quite real-time; it's batch-time), and they run many batches a day with millions of transactions running through and all kinds of triggers and thresholds.
Eric	OK.
PAR8	Then we have the Advanced Analytics team. This team has the skillset to do geospatial analytics, regression analytics, descriptive, profiling, all of the usual stuff. Hot on SAS, hot on R … and storytelling. These are your data scientist in the true sense. And we are adding to that in terms of stacks. So all the teams are side-by-side, and the Advance Analytics team is a stack. And

within that stack, I've got Retail and Cards (essentially Consumer), Advance Analytics, Corporate & Commercial ... we are adding another stack called Graduate and Internship Programs. Basically the stacks are there to do data science.

Eric   What about the evolution of Big Data and machine learning? Where does that sit?

PAR8   That sits in Capabilities Development for Hadoop … the Advance Analytics team is using Hadoop at the moment and we converge a lot of data in that environment … and once they've found the 'secret sauce', then they will transfer that into the Teradata environment with which that will be developed and deployed in our current campaign environment. Then I have another team called ES&I - Engagement, Strategy & Insights. Essentially what that team does is to manage demand and making sure that our priorities are strategically aligned to what is needed in the organisation. We also have in the team 3 relationship managers - their intent is to create change within the organisation. For example, they may say, "If we have to change the way the frontline absorbs leads, then we need to implement a strategic change management, we need the analytics guys to do this, we need the Capabilities Developments guys to do that, but we also need to coach the story along organisationally ... right across the piece." So ES&I do that rather than me doing it on my own. Well that's the external view; we also have an internal view. And you'll understand why. Basically they have like a chief-of-staff type responsibility. So that manages training, development, career pathways, employee engagement and all that kind of stuff. And they all manage my department's finance / P&L.

Eric   How large is your Analytics & Insights team then?

PAR8   Hold on. There's still another team. This last team … it's not my core team, but I have a straight-line, dual reporting responsibility for this team. And it's called Analytical Marketing. It's essentially the guys who put together the creative content whether it be emails or SMSs - go through all the approvals, make sure Legal has signed off, make sure the Agencies are sourced correctly, and so on. And that team interfaces with the Campaign Innovation team to deliver analytical marketing overall.

Eric   They are essentially the content providers?

PAR8   Yes. But there's also a legal context … they have to get the signatures …

Eric   OK. But what about Marketing Research?

PAR8   Marketing Research sits in Marketing. It does not sit with me.

Eric   OK.

PAR8   Then there's two other project teams that I also manage. One of the project teams I manage is to scale up strategic organisational change - basically a 3-year project to bring a lot of the capabilities … so we use tools like the IBM information stack, Teradata to create our environment and this team has been working with technology to implement all these capabilities to make sure it

interfaces with Unica, our call diallers, with our Siebel front-end ... so we have 20 people focusing on that integration. Very project oriented. We've also got Deloitte involved to do a lot of the build as well. There's another team that helps me to get the Oracle environment audit-certified to 'green' - I have a budget of AUD 5 million a year to fix this environment. So you wanted to know the size of my team. I have a team of 87 onshore. The 87 are split across the first 7 teams. There are further 18 in the Analytical Marketing team, and that takes me to 105. However, that FTE is not counted in my books but on Marketing's books. So it's actually 87 for me. I have a further 42 people offshore. They were my FTE until last month but they have been move to the Group Central Capabilities team. And they are the pure 'order takers'. They are based in Chengdu and they cover 3 core elements - they cover Capabilities Development, Reporting and Operations. So the BI team, which is only 6 onshore, has quite a large contingent team in Chengdu. What we are doing with the Chengdu team is to broad base their capabilities there to support Forensic Analytics, Advance Analytics and more of the operational tasks to run campaigns. So when you look at the overall structure that I'm responsible for - directly and indirectly - it's 160 people.

Eric   How long has the offshore Chengdu team been around?

PAR8   3-4 years. But where it's not been taken is doing the Uncertain analytics, and the onshore team are really struggling with this uncertain piece … like obfuscating responsibility if you are doing analytics offshore. So we're doing it in stages. And then building out Forensic Analytics offshore because that's heuristics and you go, "These are things we want to look for, look at this and this and this ... and that's the specifications." The onshore analytics team can work on equivocal stuff, and work with the businesses to talk through those things, and the offshore team can then support that. So we're trying to agitate my own team to work more with the offshore team broadly and also build the business case to increase the offshore team by 15 people - basically to support more of the Advance Analytics and Forensic Analytics stuff.

Eric   Is the onshore team located in a single central place with you or are they seated with the different lines of business that they would logically support or the people they would have the closest interactions with?

PAR8   Neither. As I said to you earlier, the lines of business have their own analytical teams - 3 or 4 people. Maybe more depending on what they are doing. So the Pricing Team's a little bigger. The Risk team is completely separate so that's huge and that's somewhere else - that's probably about 30 or 40 people. But my team predominantly sit with me - they are sitting around me; I'm literally sitting in the centre of them all. However, what we've done is we've started to invigorate the way we approach analytics - instead of delivering 'stuff', having a list of stuff to do and so on, we are going through changing the way we do work to an agile model. I'm not sure if you've seen the TV series 'Silicon Valley? Agile - it's like that. We're building out using that Agile approach - something called the Customer Analytical Asset. What this means is that every analyst can contribute to the bigger picture of developing a persistent analytical solution - be it a scorecard, a feature or an algorithm - that they can publish and it persist not only in time but historically. So you can pick up Eric with a probability to respond to A. The same probability can be calculated on-the-fly for Eric 3

months ago and also 7 months ago and also 6 months 4 days ago. So that analytical asset is basically one big 'git'?? It's using the 'git'?? framework, the backbone spine or code, which they insert new pieces of code to create more - so you've got this backbone code and they stick another piece in. And that builds out this analytical asset. As a consequence of doing that, we allow the Capabilities Development team, the Campaign Innovation team, the Advance Analytics team to all work together in terms of solving different problems. And that means they may all migrate to the 6th floor of the building to run a little mini project, a story or an epic. So it starts at the epic level and it has some stories and then do a little micro part of the story to try to drive the story itself and then deliver against the epic. And the epic might be - 'solve attrition'.

Eric   OK.

PAR8   I know this is like a fire hydrant but honestly it's a new way of doing things. I've learnt so much in here, it's unbelievable. We are at a tipping point of being able to use this technology and it will manifest in a very different way in which we engage with customers across Australia. And it's a breakneck difference in the way we are doing stuff. Not just like SAS and Excel. This is industrial scale. We spent AUD [xxx] million on this! That is confidential.

Eric   So they are all on the same floor, given the size of the team?

PAR8   They are all in the same building. Excluding the 42 in Chengdu. Even the Project Teams and the Analytical Marketing teams are in the same building. All in Docklands.

Eric   And you don't have any ORG6 business in Chengdu - the Chengdu team is not part of a local business there, they are completely standalone and supporting ORG6 Australia?

PAR8   I'm pausing because I changed the model 2 months back. And I did it to create a little more fungibility in the team. But effectively, it was a captive 42 aligning directly into me. 2 months ago. Now it's no longer a captive 42; it is part of GTS - centralised operations team that supports all lines of business, all divisions of business, in and out of Australia. But they are a very prescriptive team - it's really just a hub. Oh I forgot! I have another team! I have team over in Manila - 10 people. And they support our Analytical Single Customer View - they are basically [data] stewards to manage incorrect data matching issues or non-matches that we want to solve but couldn't solve algorithmically. So they've basically got IBM's NDM which is essentially a name matching algorithm which uses probabilistic matching, and it gives out an indeterminate group, the Manila team basically manages that indeterminate group. So they are basically just administrative.

Eric   They would logically be considered an administrative part of data governance in that sense?

PAR8   So they are part of the Information Leadership team. The offshore model as it stands today is incredibly operational. So it's database build … to specifications, operational tasks, and reporting. And I want to add to that mix, operational delivery of campaigns, forensic analytics and advance

analytics in the same way that Chennai [back in ORG3 days] worked. And that's where I want it to go.

Eric   When you use the term 'operational', just for clarity purpose, would that be synonymous with repeatability? That is can be codified? That it can be put into some rule-based standard operating procedure?

PAR8   Yes.

Eric   Could you describe a little bit about the backgrounds, skills and competencies of your team members?

PAR8   In Capabilities Development, we've got Teradata specialists, system architects, information architects, testers. In Information Leadership, we've got operational and technology guys that have system access understanding, Operations guys have some level of technical capabilities but when it gets too difficult, they push it back to the Capabilities Development guys, BI team are Qlikview experts, user design experts, the Campaign Innovation team are Unica experts - not a high level of skillset, but to get the overall organisation humming and working correctly, they have to formalise the protocols and it took some time, and they have quite lot of competence in using the tool. Within that, I have a couple of experts who work on the Unica back-end. In the Advance Analytics team, I have Revolution R experts, Hadoop experts, SAS experts, people who have a Risk background, domain knowledge, SQL skills. EI&S have strategic thinkers, process jockeys. And I've got a people developer in my team - this person is the loudest, most extravagant woman, gregarious; she encourages introverts to pull themselves out. Then I have the Analytical Marketing team which are advertising & direct mail guys who know creative content and so on. Very very diverse. However, I guess what it comes back to is - is there a career path for people within a team like this? And there is - both in terms of spans & layers and coming up (we have a grading system in ORG6), and also opportunities for people to migrate across the team or focus on slightly different aspects of their roles. The design of the team has very specific roles - I think I've got about 35-40 job descriptions that are very specific. Maybe 30. I can't remember; I did 4 organisation re-design over this last year.

Eric   Could you describe the types of business problems, not the technical problems, but the business problems that your Analytics & Insights team would work on? Do you get a lot of variety or is it always the same classes of problems?

PAR8   I've been pushing for the delivery of the right content for our customer experience. So the challenges are diverse because the team is diverse. So there could be database problems or reporting problems. But in the analytical team (decision science) specifically, we've had geospatial challenges - where do we place the 700 branches, are they at the right place versus our competitors, and doing the geospatial thing properly. Through to understanding the impact of Uber - in terms of choice of credit card in the wallet. Through to building regression models for cross-selling cards ... to be honest, the hygiene stuff isn't in place at ORG6, there's still that opportunity to go - so balance transfer, loans cross-sell, mortgage attrition, insurance cross-sell, all those core things. We are also doing a lot of work around

Hadoop and the use of click stream data, and what's surfacing is a lot more opportunities for service-related communications. For example, a customer uses his credit card at a point-of-sale and gets declined. So maybe we can send a message to say that decline may be an error on our part and we'll give you a call to see if we can help you out. The incident of attrition after a point-of-sale decline is so high that it's worth doing that in order to kind of re-engage customers. Or if a customer leaves the ATM without taking their cash, the ATM sucks it back in and say, "We've got your cash, It's safe. we'll have it for you the next time you come back." There are so many examples you can build.

PAR8   We are trying to do a lot of work around travel - sensing and detecting where customers are going. If you buy an airlines ticket with Singapore Air, we know you're going to Singapore. If you buy a ticket with Cathay, we know you're going to Hong Kong. Can we tell by the frequency and number of transactions you have whether you are a business traveller or a personal traveller? When you buy a ticket, how long is it before you go abroad? When you go abroad, how long are you there for? And can we use that and call you when you come back and say, "Would you like your card re-issued in case of fraud?" You know, just really break-out stuff. And having the Campaign Innovation team, and the Advance Analytics team, and the Analytical Marketing team 'jamming' together to really drive those thought processes creates an innovate environment, particularly when you apply agile to it as well.

Eric   And these kinds of challenges and innovation around the customer experience and engagement - are these initiated by your team or are they initiated elsewhere and your team is brought along for the discussion?

PAR8   A year ago, it was very much 'order taking'. Now, there's a lot more skin in the game on a number of different dimensions. I have a AUD [xxx] million responsibility for this year and next year it goes up quite significantly. So I have to drive change. That number by the way is also confidential. If you look at the way in which the team works, we have lots of sources of ideas - there's no end to it. The idea could come from the managing director, it could come from me, it could come from the team, it could come from the Analytical Marketing team, it could come from the Products, it could come from Wealth, it could come from anywhere. What we've been doing ... probably 6 months in ... we simplified the priorities. Because we had 6 different priority queues. We just smashed that into 1. Particularly for the campaign build. And the Analytics is pretty much the same. So we work on these priorities, but we are driving a lot more analytics proactively as opposed to reactively.

Eric   Do you find that these business problems are generally straight forward or are they ambiguous and require re-interpretation?

PAR8   I don't think you can generalise. If you infer what I'm sharing with you, the scale here is huge. So there are some that are very straight forward and some that need more work. I don't think we are perfect. There's more to do and we could back and re-fix a whole lot of stuff; there's a whole lot of testing going on ... the opportunity is so large and a lot of time you can get away with very simple solutions.

Eric	But just as a ballpark, would you say 80% of the work is fairly predictable and standard, the 20% comes out from left field … you know, it's a little bit more challenging or difficult to address?
PAR8	I don't think any of it is challenging per se. Honestly, I've got amazing data scientists in my team - they argue over whether Star Wars or Star Trek has the better kind of equipment! Honestly, they are right out there. If it's a problem, they'll solve it. The geospatial for example - given your familiarity across Asia, you would know that certain countries have better geographical representations and some have worse. Australia has probably the worst - our geographic area could cover the size of Texas. And postal codes are just not very good. However the guys use a lot of other stuff - they build gravity models, daytime, weekend, night-time, using card data transactions, and all sorts of stuff. And the way they approached it - I think it was the most ... I don't think I could have gotten an agency to come in and do the level of frontier work that they did. Bear in mind that 3 people spent 4 months on this. I think it's a bloody good piece of work. So they can solve the problems. I don't have issues finding the right data scientists.
Eric	Let's take the geospatial problem. The objective can be unpacked to various degrees and levels of problem statements. Do these 3 people who worked on it, do they worked on it entirely by themselves and ideate? Or they bring in the business along with them?
PAR8	They may bring in a consultant, or they may work with the business closely to understand the qualitative side of things. It's shared with the managing director. Serious traction. Every problem is solvable with the resources that we have.
Eric	But with a problem like this, where it's a little bit more uncommon, it's very iterative and very much in partnership with the business to lend their domain and interpretative skills to some of the data that your guys would be looking at.
PAR8	Yup. And there are other instances where they work on their own. There was this one guy who took the Hadoop environment, smashed a month's worth of click stream data and customer data and call data, and found the relationship between the instance of calls after somebody went online. It was difficult to find out as it is obvious. But when you've got big data available on these platforms, he proved these things because he could. So I don't think any problem's not solvable; it's about prioritisation. It's what we do first, and how we do the right things for the business. And change business. Which is why the ES&I team is very important. I work closely with that team to work out the pathways that we will take during the year, and how we drive, just as much as how we receive.
Eric	How would you measure the success of your team? What does success look like?
PAR8	I built a shadow P&L. There is success in capabilities development - building up stuff, yes, tick the box. And there's revenue generated - and some of that revenue would not be generated if it wasn't for the team itself. So the

team generates leads, the leads go to the frontline. If those leads were not available, some other team would have built them. But we built them because we built all these capabilities; we invested in this capability. I have a shadow P&L. Basically I know that we sent out [xxx] million leads a year (commercial & confidential) – [xxx] million messages a year. Each of those messages has a probabilistic rate of response and it has a revenue associated with it. I calculate a 3-year NPV and take a 1-year average of that, and we basically use that to define what success looks like. I know that in 2014, we delivered AUD 360 million worth of revenue to the bank. For next year, we've run all the P&L, we've got all the different lead types, all the different revenues ... 4 quadrants to this problem - number of leads, number of conversations had, number of sales made or units sold, and the revenue associated with that. That gives the Finance guys the levers of control to understand whether he invest more in analytics or does he invest in other ways of driving the productivity in the organisation.

Eric   Are there areas you wish your team to be more involved in, but they currently are not?

PAR8   I actually just want to advance more on what we are doing at the moment. We've been stuck in the last 3 years in projects to just build capabilities. And the last year has really been about pushing that through in terms of building success; being delivering that capability. And a lot of it has been the cost of driving change with Technology and technology support - because technology doesn't understand data; even though they are party to the game, they are not data scientists. We've had some struggles over the past couple of years with really building that out. Where we are now is that we have all this capability, we are using some of it and there's a huge opportunity.

Eric   So two things - do you get criticised for inaccurate information or intelligence, meaning your data quality is a bit of an issue - you get it wrong, or do you get criticised for irrelevant or incomplete information or intelligence, meaning, "I asked you to do A and you came back with B or you came back with less than A."?

PAR8   These are going to happen, on a case by case tactical basis. But overall, No. There's a lot of different pieces of analysis done by the team that the organisation is generally happy with. The head of audit is concerned about code written on code written on code ... Instead of a data quality issue, I have an audit issue that's been isolated with the ECDM Oracle platform. In order to prove that, we've found that we got 420 different solutions that we've built on that platform that supports the organisation as a whole, ranging from minor to moderate to major 'trusted' - in terms of its risk rating. And that risk rating goes to a regulator and we could be making decisions that could have a downside of AUD millions. Those risks are allocated accordingly across the business and we are a cause of that risk, and so you put the controls in place to manage the cause. And in order to do that, what I have are a number of checks and balances in place - how does the data come to ECDM, does it complete or are there gaps in the data. And then there's the other piece of putting the right controls in place for the reporting - do we have an alternative source; do we verify 1 or 2 figures straight from the source system and do we go through that diligence. So in the build of the reports, yes, we do all the checks and balances, but even when we run it, we put

additional checks and balances in the major trusted stuff. There are people of my team that have been working on this database for 25 years, so domain expertise is huge. We don't get criticised ... that's not where the criticism is. The criticism is "How can we do more faster with the bureaucracy we have in the organisation?"

Eric   I want to pick your brains a little bit and get your thoughts around offshoring. So you've got Chengdu - Philippines would be different because it's more of a data quality / data governance type of activity. But let's say on the analytics side with Chengdu - if you could, would you expand that team further? I believe Chengdu happened before you joined ...

PAR8   I've already talked to this - I'm trying to expand Chengdu to 42 to 57 in the first instance. I'm trying to focus the offshore team to focus on those areas where there is high specificity - e.g. forensic analytics, and activities that you would classify as 'uncertain'. And getting the team onshore to play the role of mediating analytics and driving the team offshore to do the work.

Eric   But what's driving the need for offshore - is it largely cost? Or skillset? Or just a different way of wanting to do things?

PAR8   Australia is interesting - you have a group of people working in Melbourne and you have a group of people working in Sydney. They are quite separate. There's a finite pool of people here. There is a downside to create unconscious bias with a single geographic location for an analytics team. When we bifurcate the analytics team, we take out unconscious bias out of the equation. The other opportunity is, yes, there is a deeper skillset in China and India and elsewhere - there are cost benefits and there are also FTE benefits. And there's also centralisation benefits. Centralisation benefits in the sense that Institutional Bank having analytics teams in the same place as Wealth, etc. But it requires good analytics team close to the business to deal with the equivocal piece. So I think you can get rid of the unconscious bias and you can scale up the delivery. Bear in mind that our delivery in going to grow exponentially. Because we have the ability to develop a trigger, execute that trigger on a daily basis and understand the response to that trigger, and then build a regression model on top of that 1 trigger. Now I've got 50 triggers and I'll build 50 regression models.

Eric   And those regression models are 'uncertain' type of problems and would be built out of Chengdu because they can repeat it?

PAR8   Yes. Or the forensic analytics where you've go 50 different terms and conditions, 50 different card types, and you want to test all the permutations. Why would you want to do that onshore? The cost of onshore resource is probably AUD 150,000, offshore you are looking at AUD 50,000. So there are significant cost benefits, and it makes sense to have process-oriented or prescriptive analytics to be handled there.

Eric   Because the work in Chengdu is prescriptive analytics, then you wouldn't get issues around incomplete or irrelevant analysis from them?

PAR8   I have a team of 15 data scientists onshore who can address the equivocal issue. I'm thinking each of them can have 3-4 people each in Chengdu supporting them. So they can scale up their delivery.

Eric   So the onshore guys front it, and reduce the equivocality and make it prescriptive, and then it goes over to Chengdu.

PAR8   That's exactly.

Eric   Eric thanked PAR8 for this time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections. And to indicate areas which are confidential and should not be re-produced.

Person	Transcription
Eric	Eric thanked PAR9 and explained the BI&A organisation design research.

Eric   Can your briefly tell me about your background and experience with the analytics practice?

PAR9   So I'm completely analytics. I've got a Masters in Statistics and Mathematics back in 2001 and I joined an Australian software company (Pathfinder) building regression models, and then I joined Diners Club Australia as a junior analyst, busy working my way up. I was there from about 2003-2007. In Diners I managed credit cards analytics and then became the Diners analytics head. And then I moved to ORG3 Korea in 2007 where I was the Decision Management head for Cards, and then I became the Decision Management head for the country. And then I came here to Singapore where I work in the ORG3 regional office, where I was initially in charge of Next-Gen analytics but I kind of was doing pretty much everything, from projects to business analytics. And then 6 months ago, I became the Head of Analytics for the ORG3 Asia Pacific region. But it's all analytics - all the way from my studies till now. I was 12 years in Diners & ORG3, 3 years in Pathfinder - 15 years. And then I studied for 6 years.

Eric   I will use this term Business Intelligence & Analytics (BI&A) as a catch-all. Different organisations may define it differently - Customer Analytics, Database Marketing, etc. I don't want to put a label to it. I'm saying, however analytics is practiced in your organisation, it would fall into this space called BI&A - reporting and campaign activities and all of that. So now, I would like to understand what Business Intelligence or Business Analytics mean for your, since you've spent your entire career in it.

PAR9   There are certain things like 'ticket to ride'. For example, MIS. Is that really in BI&A? Not really, I don't think so. But in our current job, that is on the table. But if I took that part out, Campaign and Analytics - these are 2 parts we have in ORG3 - I think that's more BI&A. The campaign is more the execution of the analytics. In some ways, we should be doing what the product guys are doing - we should be identifying revenue opportunities with the data, trying to figure out where we can drive more profitability - more revenue or expense savings; or even challenging Credit [Risk Management] to say, "There's opportunity in the NCL line as well." Between the product guys and the portfolio guys and Decision Management [ORG3's BI&A team] ... they're actually one. And I don't understand, to be honest, why it's 2 different teams. I feel that maybe I could do a better job than some of the portfolio guys. Because they have that data background yet they do a lot of other things. So that's on the revenue side. The other, as I said, it challenging Risk [Management] - they are trying to minimise loses and we're trying to maximise opportunities ... and that's all an analytical discussion.

Eric	Can you tell me a little bit about the analytics team that you have now? I'm just going to give some context here that I'm familiar with - you've done both a country role (in Diners and in Korea), covering analytics, reporting and campaigns … and now you've come to the region, in the midst of a regional centralisation and offshoring initiative; organisation re-engineering. You've therefore got this very nice perspective of seeing it from both sides. So if you could elaborate a little bit about the analytics reporting structure works for your today, and why does it look like that?
PAR9	So in the ORG3 analytics world - we have 12 countries and within each country there is still an analytics team - there's a head of analytics in each country - with a team of 4 to 5 people in each country, and each head of analytics reports into the country Decision Management head. In my regional office, I have 3 people, and I also have a team of 8 people sitting in Bangalore - they support the regional team. So that's the current reporting structure in the organisation.
Eric	You mentioned that in each country, there's a head of analytics who reports into the head Decision Management. So, Decision Management is more than analytics?
PAR9	So under the country Decision Management head, there's an Analytics head, there's a Campaign head, and there's a Business Information head - basically an MIS team. In some countries, there will be the Sales Incentive management function as well (supporting Sales & Distribution), but not all countries have that at the moment.
Eric	So under your remit, when your say analytics, it's really the datamining, the modelling, the scoring, the deep-dive part? Nothing to do with the report generation? Nothing to do with campaign execution, although maybe your get involved with campaign design and analytics?
PAR9	The analytics team is really the front [face] to the business. So we take up a liaising role as between the Campaign team and the Reporting team - we kind of manage the overall piece. So for example, when we were building the regional MIS for Cards, all of the formats and definitions of the fields is all done by my analytics team and the business teams. Once we finalise what those definitions and formats are, we hand that to the MIS team who will then go and build it for us. And they will continue to run it. So we're [analytics] involved all the way from start to end, so that we understand the reporting piece - how something is defined, how is it related to analytics - and how do we translate it into a campaign. Because that's at the end.
Eric	Does the campaign tracking and assessment flow back to your team?
PAR9	So my team's involved in what should we track, how should we track. Test & control - how do you define Test. What do you do when you don't have a Control group. Portfolio activities vs usage campaigns. So all of that - the knowledge to track - is created by the Analytics team. Once that's defined, we move that into the Campaign team to build and run that campaign by campaign. Could it be that the skills to do that is currently not in the Campaign team? I think that's the reason why. But maybe I'm also being selfish because I want to know how it's being tracked; because I'm the front

guy to the business to say whether a campaign works or not. So Analytics is little bit like a jack-of-all trades but once the theories and designs are done, it then goes to the other 2 teams to implement and execute.

Eric   So for simplicity, in layman's terms, there is an 'insights-generation' part to analytics, which is a bit more adhoc, and there's an executional and operational part of analytics, which is the coding, the running of the data, the extraction and delivering it to the field - and there's this separation of the two. So you don't do the operational part of it, although you advice the desired outcome that you want to see, but they would manage the coding, they will manage the process flow as best as they understand within their own world.

PAR9   Yes, that is correct.

Eric   And that's a happy situation in terms of the organisation design?

PAR9   I would say that for my team, it's good, because we own it end-to-end. But for the other 2 teams … you know, it's like, "Here's an order, your just do it." But obviously I don't just say, "Here's the requirement, your go build it.", and walk away. They are still involved from the start as well. It's not like we do all the interesting discussions and they only get the business requirements document; I include them in all those discussions as well. So that everybody feels like one team.

Eric   But do the other 2 teams face off with the business at all?

PAR9   There is some face-off, but it's minimum. When it gets complicated, it will come to the Analytics team.

Eric   So let me go deeper. Within the analytics team, you are the face of the larger function called 'Decision Management' to the business. Whether in the country or at the regional level. And even at the global level in NY.

PAR9   Yes.

Eric   And internally, there is a workflow process between the Analytics team and the more operational parts of Decision Management like MIS/Reporting and Campaigns. There are internal handoffs to manage, but these other parts of Decision Management do not interface very much with the business.

PAR9   Yes.

Eric   So if there is a problem with the reporting, the business will come to the Analytics team and seek a resolution with you. And similarly if there is a problem with the campaigns.

PAR9   Yes, most likely. When we have a new person in the MIS team, then the business will come to the Analytics team for problem resolution. But as the new MIS person becomes more experienced, the business is able to discern if the problem is more operational and they will start going to the experienced MIS person directly. If it's a definition issue or it has a broader business context, that's when they come to me. So, if the reports didn't run on

time, the business will go to the experienced MIS person. But if the question is, "Hey, we want to track something new. What do you think?", that's when they'll come to me and say, "Does that makes sense, etc." So, while here I am facing off with the business, but as we go on and the regional team's getting bigger, people are starting to understand to go to the right person for operational fixes and to go to the analytics team if they want to add something new or it's something broader.

Eric   So in some sense, business has been 'trained' and self-selecting to approach the right individuals for the right type of work.

PAR9   Yes.

Eric   And so your attend senior management meetings and such. How close are your to understanding the business strategies, challenges, and such?

PAR9   I would say I'm very close to it. I have a weekly meeting with the Cards head; I'm not as close to Retail yet because their needs are more MIS-oriented. And my boss [regional head of Decision Management], he also goes to the regional senior management meetings once a month. So I would say that for the major products that we have - which is Cards - I'm basically on the 'mailing list' of his management team. I'm in there!

Eric   Do your wish for this organisation structure to be different? I understand that it may have been defined prior to your taking on the role, but given the kinds of challenges and opportunities that your see, would you, if you could, define the organisation a little differently?

PAR9   That's a tough one. Because I've seen it when it wasn't yet centralised [in the region]. I've got a good sense now of the sorts of challenges we face. I think those operational things that are clearly defined and don't change, I think they are things that we can offshore, or centralise. But what I'm finding though, is that those requirements change all the time! We created all these MIS and we've got to use them. But then the Cards business head has a question about a segment, I go straight to the MIS and I find that the dimension is not in the pivot table, so now I'm stuck. So the only way to get the data is to go back to the country guys and ask for it. I think it's limited in what it can do, in terms of the MIS part, because it's never static ...

Eric   It's only static for a short time. So what you believe is repetitive, it's actually not!

PAR9   Correct.

Eric   We sort of delude ourselves to think it's stable and repetitive, but actually it isn't.

PAR9   I agree. There are maybe, I'm making this up, 60-70% of the questions that we want answered and that is static. But what happens is when your start to drill down, you know, 40 questions may come from 1 insight, and your try to answer those 40 questions, and suddenly your MIS is not useful anymore. So your go back and run your own analytics. So, the MIS can get you to a point, but you cannot go 100% of the way. Because there will still be this

requirement ... you'll need a face-to-face or you have to go and run extra data to try and answer the questions.

Eric I've seen organisations where they have evolved to create scale and efficiency by 'verticalisation' of roles and functions. For example, the campaign part, the MIS/reporting part, the modelling part, etc. And today, these organisations are thinking of evolving towards a structure where they've got generalists. When I started working in ORG3, I remember we started from a generalist structure approach and then verticalised it. Now, there are organisations that are going back to that generalist approach and say that, maybe it's good for an analyst to be a generalist, and they take on a particular work end-to-end, constructing the MIS, the analysis, and even the campaign design. Assuming that the infrastructure is built on re-usable assets for which they can put into an automation framework, so they can decide how they would design a report and then own it.

PAR9 That's the view I sort of take. We need to understand the end-to-end. Essentially, I don't see myself as the Analytics team. I see myself as part of the business group that's just good at doing analytics. And I think that's the difference. If I just thought like an analytics person ... it has to be business focused. What it means is that you have to understand end-to-end; you have to know what the problem is, how you're going to solve it, how you are going to track it and how you're going to execute. If I just give up the execution and tracking part and say, "I don't need to worry about that.", I'm missing like 50% of the whole piece. So even though we are structured this way, because your do need to have specialists in each of those teams ... I don't really want my team in analytics to be coders ... I want them to have an analytic bent to problem-solving. Does that make sense?

Eric I want to talk about the nature of problems. There are problems with multiple interpretations; problems can be ambiguous, versus problems that are very clear - I need to build a credit scorecard, I need to build a cross-sell/next offer model - where you know what the objective is but your need to get the right data and right computation logic to give you the best outcome. Can you describe the nature or the type of problems your get - are they generally of an ambiguous nature, and if so, how do your deal with that ambiguity? (I'm using ambiguous and equivocal in the same context.) How do you work through that process of getting alignment and convergence?

PAR9 So most of the questions we get are ambiguous. But if the business person making the request already understands what Decision Management or Analytics does, he can already pre-filter what the request is. From an analytics point of view. However, sometimes I find that when they pre-filter it, they think they are experts but they are not. Which is even worse because you end up developing something that's never going to be useful. But 90% of the time - we have these business problems; how do we solve it using Decision Management? The first step is to sit down with the business guys and understand the revenue line that they are trying to solve for. And once I understand that this has an impact to P&L ... if I can't find that P&L link, I try and kill the request ... and then I go into the issue. For example, CONFIDENTIALLY, we had a conversation last week on Rewards cost. We wanted to understand how we reduce the point transfer junkies by getting them onto a new rewards portal which has a cheaper cost-per-point. So that

was the request. I said, "That's fine. But what is that you actually want to achieve?" They said, "I want to lower my cost per point." And I said, "What do you then want to do? Do you want to run a campaign to get these guys who are regularly redeeming ... Ah! So you want to proactively predict if someone's going to do a redemption ..." So we go through that phase where you know what is the P&L you are trying to impact, but how do I put the analytical tools to try and solve that. In the end, we said, "For now, it's a segmentation. We want to find those guys who are heavily redeeming ..."

Eric   And you decide it's a segmentation?

PAR9   Yes, obviously I will get the business buy-in … we're going to do a recency-frequency-monetary (RFM) type approach, which they understand because they've dealt with analytics before, but they leave it to use to come back with the analytical solution, as long as at the high level, it sounds like it's going to fix their problem.

Eric   Do you get into situations where you can't interpret; you can't get convergence? How do you work towards convergence? What are the necessary ingredients that allows you to get clarity on what the problem statement is? Is there a procedure you employ?

PAR9   I don't have a set procedure. It varies person by person. I'm not really sure how to answer that; it's a tough one. It's really just through the discussions. Some discussions are short because it's clear what they want to do. Others are so ambiguous even you are struggling. Let me give you an example - the business says they want to improve activation. So I asked, "Do you mean on new accounts, or on the portfolio?" She says, "I don't really know." So it sounds like on their side, they've got an order from their boss to improve activation ... so that's the first point I was making - what is the P&L impact. If she can't answer that, then I say, "Go away. Come back when you are able to explain." And we haven't done anything on that project for 2 months because she hasn't come back yet.

Eric   Would you not sit with her and help her unpack the problem?

PAR9   There's a trade-off between the strategy and priorities that the big boss wants to look at versus what she's looking at. Yes, I can sit with her and we can go through and I can guide her, but for this particular project, it's not a priority yet at this stage. So I'm not proactively helping. Plus I also know the priority list and the things that will have an immediate P&L impact versus this initiative, and that's based on my experience.

Eric   Right now, you are speaking from the perspective of you, PAR9 Hitchcock, being involved in these discussions. But you've got a team, both in the region and in the country. How do you know that your team has worked through the ambiguity in the problem? That they've already managed to get to the right clarity of the issue. How do you know that?

PAR9   Sometimes, you do need to have a senior person with experience to be across it. So the Analytics heads in the countries should know when they've achieved clarity as well. So there has to be some delegation of that. But I have found many, many times when that's not done properly; we waste our

resources big time by doing work and when the results come back, it's not what the business is looking for. And then it just becomes a PowerPoint presentation that no one ever uses.

Eric   So does that happen often - that the business comes back and say that the analysis is incomplete or irrelevant?

PAR9   I would say roughly 1 in 3.

Eric   That's very high!

PAR9   1 in 3 would be … 1 meaning we create something the business really implements. The other 2 is we tried but we couldn't find what we were looking for because the data was not predictive enough, or the business had moved on, or we didn't understand the rationale of what they were trying to solve for.

Eric   In the case of the 2 where you said you didn't understand the rationale, would you be able to shed some insights as to what broke down in the process?

PAR9   It's more that the business person that we were liaising with … they didn't quite understand. They've got a directive from their boss to solve something …

Eric   Business was wrong rather than the analyst?

PAR9   I think there's that … it sounds a bit arrogant. Or we didn't take enough time to go into the low-level details such as - this is what you need and this is what will be implemented. But there are a lot of times when you are doing analytics where it is unknown - we try and build propensity models and we find that we can't find a lift. So we put it into the trash can. But it's not to say that the work was a waste of time because at least the next time when we try and build that kind of model, we would know what not to do. And sometimes, no result is a good result because it's unintuitive. So maybe it's both parties - the business didn't understand exactly what they wanted to do, and we also didn't push them enough to make them understand what they were really asking.

Eric   So given that 1 out of 3 leads to success, and this is no criticism at all, … and you would say that 90% of your problems today are fairly ambiguous or equivocal in nature, they are much broader in context and they need to be unpacked - which is great ... so how important is the organisation structure and design in getting the 1 in 3 or even improving on the 1 in 3? For example, face-to-face interactions, sitting with the business and being mixed in with them; the proximity, being part of their management team, having resources within your team that are from the business before (because their skillsets are different, they are not necessarily statisticians); could you elaborate on how these organisational 'attributes' impact and to what extent?

PAR9   In the offshoring exercise, Analytics is not being touched here in ORG3 - having that face-to-face with the business, both in-country and at the region, that's extremely important. Most of the discussions are done with a piece of

paper and pencil and trying to show visually what you are trying to do, and it would be hard to achieve remotely; if you take that away, it becomes very complicated. We have the team in Bangalore - their job is to build the analytics solution once the onshore team have understood and dimensioned the problem. Even at that point, the Bangalore team may not always develop the solution as what we require because they were not part of the original discussion to understand the details.

Eric   So there is a breakdown in the handoff and communication between the analytics teams?

PAR9   That's correct.

Eric   Are you communicating to them via email? By phone call?

PAR9   Email is no good at all. We do it via phone calls. Not just me, but my team, is constantly on calls with the Bangalore team, reviewing what their work. Just like you would do in the countries, you would have reviews with your teams on their progress. That happens more regularly over the phone because it's remote with the Bangalore team.

Eric   When you do it over the phone, how do you know they have understood exactly what you've told them?

PAR9   Best thing we have now is the Communicator - I'm able to see their screen and they are able to see mine. We spend a lot of time on Office Communicator, while we are on the phone, and we are walking through their Excel to understand exactly what they are solving for, how they are solving it, and what are the results. So we have the review as though someone is sitting next to you with the outputs - you would be reviewing that, but now we are doing via ... so the Office Communicator with its ability to see the 2 screens - that has been a life-saving thing for the regional office.

Eric   The fact that your in-country and regional Analytics team face off with the business, take the instructions, structure the problems, and then pass it on to the Bangalore team to build either the reporting or the analytical models, there's a lot of insights and knowledge, I presume, that's gained when they are in the process of doing this work, because it's also discovery to some extent. Because of this handoff to Bangalore, do you feel that the in-country team now lacks the knowledge from a data perspective, to be fully engaged with the business?

PAR9   Yes, I would agree. The in-country teams are not building the models, and they are not going through the details of what works and what doesn't work, the next time they have the conversation with the business, obviously they won't have the knowledge. So, I agree. There is definitely some loss of knowledge by getting somebody else to do it. For sure.

Eric   But is it because it's just poor documentation or a poor design of the communication framework within the onshore and offshore analytics teams that's the root cause rather than the fact that work has been partitioned?

PAR9	There is, but no matter how much documentation your do, most people won't have the time to read it. If I look at the in-country team, if one of guys were building a model, and the other guy was learning how to build models, they would just take the time to meet with each other and discuss. Because we were physically located together, you can have this discussion - "Has anybody done this before? What did your guys find?" It's not even documented - it's in somebody's head. And even if it were documented, it's not indexed and nobody would even know it exist. I know it's not good when everybody leaves, but you know what I mean. When you take it across, what's happening is that the Bangalore team and the in-country team don't feel like they are part of the same team. They feel it's them vs us. And the in-country guys feel like they have to pull all the data for Bangalore, Bangalore is going to do all the fun stuff which is the modelling, and they'll give back the results. Which country guy wants to just extract data?
Eric	So the country guys actually feel that the fun stuff is being done in Bangalore?
PAR9	Yes.
Eric	Would the Bangalore guys feel that the fun stuff of meeting the business is being done by the country guys?
PAR9	Maybe. It depends on what they like to do. I think somehow we have to bring those 2 teams together, which is so difficult currently. And also for some of the in-country markets, culturally it's difficult to interface with Bangalore. For example, in Korea, the level of English is not as good, so it's difficult to connect with Bangalore where the primary language is English.
Eric	Because the model of communication is largely via phone and Communicator. So spoken language becomes critical. If you could only communicate on email, then the Koreans still write fairly good English, then it won't be such an issue. But because they have to speak [in English], then that becomes the roadblock today.
PAR9	Yes.
Eric	Prior to this transition to the centralised team in Bangalore, ORG3 had a different model. You had most of your teams in-country. How does it compare now in terms of the speed, in terms of the ability to turn around a problem, in terms of the ability to get it right - instead of 1 out of 3, was it 2 out of 3 then, where they were able to solve the problems better? When you had a fully embedded team in the countries and you didn't have this offshore [Bangalore] team?
PAR9	Because Analytics hasn't been offshored as much as say MIS … in MIS and Campaigns, what I'm starting to see is that when we need to do a campaign that's the same across the markets, it's way faster doing it in today's centralised model than before. From a regional view. That's the execution piece. The tracking is still all over the place today but it will improve. So if there's a regional campaign, the regional product team is asking for something, the speed-to-market across the different markets is much better than before. In the Analytics side, because the only thing that's been

offshored is the model-building - what we are facing at the moment, because we have all these procedures, we need to get the sign-offs, it's actually slowed things down. The markets are saying is it really worth doing model because it takes too long. What I'm trying to do now is to solve for that - can I semi-automate the annual model validation. We can improve the process; I don't think that's a problem due to centralisation / offshoring but rather it's from the process and bureaucracy.

Eric   But with the centralisation and offshoring, has there been an increase in bureaucracy that's required to hold this together?

PAR9   Yes, absolutely. There's more meetings - there's definitely more operating committee meetings. There's a lot more procedures we need to follow, a lot more documentation - the documentation side has greatly increased - the load being more on the MIS and Campaign teams, a little less on my side. But definitely, initially there is a lot more work due to bureaucracy.

Eric   So if you bring in a new analyst into your team, and the Analyst team being the face to the business, how do you bring someone up to speed? Do you look for a particular type of profile, given now that you've offshored modelling, you've offshore some of the database management and reporting, how difficult is it now to find someone who is a statistician or data scientist, or analytical person, versus finding a business person who can do that interface?

PAR9   They would need to have an analytical bent. 60% business, 40% analytics. What I look for is maybe people on the portfolio management side - they have good understanding of how to manage a portfolio …

Eric   Is having business experience a requirement for you?

PAR9   Yes, but they can't have no analytical knowledge. It must be from a business area that has analytics, where analytics is required to drive it. So that's where looking at a portfolio management person is really a good starting point.

Eric   But where would you find someone like that. A person in the business most likely won't have deep analytical exposure. A modeller or statistician may or may not have business experience.

PAR9   The person doesn't need to know how to build the model, but he needs to know how to use the model. Building the model is not where it's at - the software can handle that. Pretty much anyone can do that these days.

Eric   But with the advent of Big Data and Machine Learning, is that statement necessarily true?

PAR9   No, it's changing. I'm seeing a shift now. From a modelling point … but still the concepts are the same, but now it's more a real-time view. I hear what you are saying - you still need a mix between the analytics and technology side, knowing how to use it, knowing enough to say if I know how the systems work, if I know how the model works, how to implement that tool into a business context, that's the sort of person I'm looking for, rather than someone who knows how to build a logistic regression model, know how to

build a machine-learning model - that's the part that's offshore, that's the part that's 'outsourced' to a specialist. So the Analytics guy is the guy connecting all the dots between the analytics, technology and business; he can see the whole thing, he can understand the whole thing.

Eric   But because of this bifurcation of skills, are we not moving away from the market prescribed job description of an analyst or data scientist having a combination of computational skills, statistical skills and business domain knowledge?

PAR9   In terms of the centralisation initiative, it's hard for me to say, because Analytics hasn't really been centralised except for the modelling part. I can see your point. There could be a risk that that may happen. But I think in the Analytics side, because it's end-to-end, I don't think that would happen. As long as you are finding the right person who has built models in the past and they know how to implement it, that's the sort of person we are looking for.

Eric   Today, Analytics is part of a vertical function within Decision Management. Decision Management, both in-country and in the region, as I understand it, reports into Customer Franchise, which includes Marketing, Customer Experience. From your opinion, do you think that's the right reporting structure, or should Analytics report instead into IT, or should it report into the business line that it supports; anyway since the execution is offshored and centralised, should you just have separate analytics teams for Cards, for Retail?

PAR9   I think where it sits today, in my view … the idea was ok but in reality, it may not be the right fit. Because, CONFIDENTIALLY, the person leading it Customer Franchise comes from a digital marketing background and does not quite understand analytics. His natural behaviour is toward supporting the Digital side. I honestly have not seen any benefit whatsoever of having Decision Management under Customer Franchise. But I have strong feeling that it's because of the leadership rather than the organisation design.

Eric   If you had a person who could leverage the skills across Decision Management, Marketing and Customer Experience, it would be powerful? And then it would be the right place to put the Analytics team?

PAR9   If I look at ORG3's strategy to become a more digital bank, and being more customer-centric, having the data piece with Marketing, and having data piece with Digital, all that fits together. It just needs to person who can connect them. Today, we are still silo-ed. Decision Management is working closely with the product guys, but not so with Marketing or Digital.

Eric   So why not have Decision Management be part of IT, given this whole push toward Big Data, Machine Learning, data governance, etc. Would Decision Management be better served by being part of the CIO group, part of IT?

PAR9   I think the Analytics vertical of Decision Management sits closer with the product teams. So that's where it should sit - somewhere around products. As you said, with the technology piece becoming even more important now, there is a need that we need to be working more closely with Technology. Is today's organisation model the right one, I still don't think so. It's way too

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slow to-market; that has to be fixed quickly. I think ORG3 is making some progress there - they've just announced the ORG3 Fintech initiative. So how can we get to market faster by perhaps having these smaller teams build something quickly and then roll it out. So where Decision Management should sit, in my mind, and perhaps I've been here too long, I see we spend all of our time with the product guys. I would say having us seated alongside the product guys, but not necessarily reporting into them because of the conflict of interest, is the right place to be.

Eric   And Product isn't Marketing, it's different?

PAR9   No, it's different. By Products, I mean the lines-of-business; like the Cards head, the Retail head.

Eric   You wouldn't put Decision Management under Marketing?

PAR9   Again, it may be because of who the Marketing head is. If the Marketing head is extremely data-driven, then it could potentially work. The reason I'm not saying 'now' is because the person who is there today, it would be a disaster.

Eric   Decision Management used to be a direct reporting role into the Head of Consumer, both regional and in-country. Decision Management was pure Consumer support. Assuming you have the right person leading Customer Franchise who could connect Marketing, Digital, Customer Experience and Decision Management, would this current organisation design be superior to the previous direct reporting and stand-alone structure?

PAR9   My first reaction is that would have been better to leave it as it was. Essentially we layered the organisation; I've seen a lot of people leave; that initial change has been really detrimental to the function …

Eric   But part of it is ego?

PAR9   Possibly. But in some way, we lost our voice. Customer Franchise head is now the voice of Decision Management on the management team, an if the person is not knowledgeable about Decision Management, then we don't get a voice at the table anymore. What I'm seeing is that it's very easy to blame our reporting out - "Oh, Decision Management must have coded that wrongly!" Now if Decision Management doesn't have anyone at the table to defend that - "No, it's not. It's the way the data is or the way the business has defined it, etc.", then we don't get that say anymore. Suddenly, there's been a ton of work coming because the person on the leadership team is not able to defend the function in the right way. I think the intent was a good one to try and put all these things together into Customer Franchise, but honestly, I think it was not a good outcome. Also at the global level, the Global Customer Experience team has been moved under the Global Head of Cards ... I think at the global level, they are also saying having that team separately doesn't make sense; it makes better sense to have it sit under the P&L owner as the P&L owner is the one that has to make the decision at the end of the day.

Eric	At the beginning of this conversation, you said you were fairly happy with your participation at senior management meetings. But with the layering that's been experienced by Decision Management, it has created a 'distance' …
PAR9	In the markets. Not so much at the regional level, because we are a small team. But I can see that it's created a distance in the markets.
Eric	And this distance has led to a diminished voice at the table, which is leading to possibly doing work that's deemed as less relevant?
PAR9	Yes, non value-add.
Eric	So getting things wrong, getting things incomplete, is partly caused by this layering?
PAR9	Yes, because now they can't kill the questions quickly at the senior level. You get the minutes of the [senior management] meetings, where it outlines the numerous task that Decision Management has to follow-up with, but if we were at the table, we could quickly kill it right there. So that is definitely the downside to this whole piece. But again, it depends who the head of Customer Franchise is. I would guarantee you that in the Philippines, where Roy, the Customer Franchise head, and who was the ex-Decision Management head, those issues that I just said, would not happen. Whereas in the case of Indonesia, where I know that [xxx] is not at the senior management table, and the Customer Franchise head is unfamiliar with Decision Management, he [xxx] is getting hammered and that's why he's resigning.
Eric	So one last question. You've had the unique opportunity to see the pre and post impact of centralisation (i.e. bringing things to the region) and offshoring (i.e. bringing things into Bangalore) at ORG3. If the Bangalore team was part of the centralised team and placed in Singapore, how much of a difference would that make, and would you then, be more amicable to 'internally' offshore the Analytics team? I'm presuming that the reason why the Analytics team has not been offshored into Bangalore is because of the distance. But if there was less of a distance, would you further reduce your Analytics team in the country and have them supported out of the region/offshore?
PAR9	I think the answer is still 'No'. Even if the offshore team was close to us in Singapore, those regional projects would be easier for me and I wouldn't be on the phone so much, but the in-country Analytics teams are dealing with specific in-country challenges. Where there is a common issue across countries, the region gets involved and try and solve it once rather than 12 times over. There will always be a need for in-country Analytics team, is my view. And I believe that is the current direction of the strategy - we are not planning to offshore or reduce the in-country Analytics teams. Because we know that those questions are always ambiguous and they are always going to be country-specific in certain cases.
Eric	But you do acknowledge that even though you've chosen not to offshore the in-country Analytics teams, their capabilities have been diminished because

part of the work and Decision Management has been offshored and centralised; there is a disconnect plus loss of knowledge with the data.

PAR9   Yes, I think that is the case. Again, it comes down to the people … what I'm trying to move towards is that if the country can feel that if the team in Bangalore is an extension of their own team, that mindset … even in country, 2 people can be sitting next to each other and never talk to each other. Distance does make is a little harder, but it's more in your mind.

Eric   I have 2 more questions then. You do bring out a very good point. CONFIDENTIALLY, I've seen at ORG1 Bank, where they do some kind of hard-pairing between the onshore and offshore team - there are people in the offshore team that are dedicated to support specific members of the onshore team, much like an extension of the onshore team. They are not fungible resources. Is that model better?

PAR9   I don't think so. Campaigns is currently done like that - they've got a dedicated offshore team per country; they've taken the headcounts out of the country and moved it to Bangalore. Whereas in Analytics, we've kept it fungible. Why is that? I haven't really thought about it, but it's more that the problems we get in Analytics are much broader - e.g. we want to have a better way of targeting insurance cross-sell across the markets. That method, even though it may be slightly different by country, the overall methodology is probably the same. So I can fix 12 markets in one shot. But on the Campaign side, because it's ... there are regional campaigns but there are also very specific country ones ... In my mind, for Analytics, I don't see the value of having a dedicated team by markets; keeping it as fungible resources is the right thing to do. That's also because I still have the Analytics resources in the countries. So in some way, I still do have a dedicated in-country team, and hence I don't need to do that 'dedication' in the regional office.

Eric   So the region is more for collective skillsets and load-balancing?

PAR9   Yes.

Eric   What if Bangalore team was not in Bangalore, but was in Delhi. There was a time, when you were in Australia, where the Australia Decision Management team had outsourced their campaigns and reporting into Philippines, and that outsource team in the Philippines was part of the Philippines Decision Management team under [xxx]. So they were offshored but they were an extension of [xxx]'s team and he could use them, and they were part of his management design, and so they had exposure to Philippines business, and assuming 70-80% of businesses are similar, that team then had exposure to business domain. To some extent that model worked but scaling was a challenge. So if the Bangalore team was not in Bangalore (where ORG3 doesn't have its India headquarters), but it was moved to the India headquarters in Delhi, and make them part of ORG3 India's Decision Management team, would it be different?

PAR9   I think so. That would not be a bad idea. I think the only thing you would lose from that is moving from a centre of excellence where you can also look at US, because Bangalore more than just Asia - you'll lose that, but on the positive side, you gain with having them seated alongside the business where

they can start to learn. It's a very interesting model; I've not thought about that before. That would be something to consider.

Eric   A few banks have started to move toward that model. They would still have to offshore because of cost considerations, they can't run away from that. But they figured that maybe the offshore location should be in the country where they have a significant presence and embedded with the country's HQ.

PAR9   I like that idea. The guys we have in Bangalore are fresh out of college with Masters degrees, with high marks and very analytical, but they have no business understanding. Putting them alongside other PhDs has no benefit as they [the new hires] already know how to do it, but there's no one there to impart business knowledge. And for analytics, that's an important aspect. I like that idea! Something to think about.

Eric   Eric thanked PAR9 for this time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections. And to indicate areas which are confidential and should not be re-produced.

Title   Country Head of Credit Cards and Loans
Organisation Code   ORG3
Date   March 25, 2016
Legend   [xxx] implies redacted due to participant confidentiality

Person	Transcription

Eric   Eric thanked PAR10 and explained the BI&A organisation design research.

PAR10   My view, as a business, you need to have a partner on the analytics side who understands your objectives, who's close to you. I would rather that person outsource whatever they want, to Bangalore or to Delhi or to Chennai …

Eric   But the person who is close to you, is he an analyst? What is he?

PAR10   Even in this current role, I've worked with 2-3 different people, from Sally's time till now. Now we have a very strong person that we hired about a year ago, from Singapore, from ORG2. The difference is - you need a skillset and talent in that position who is not only very conversant in data and information, but how to interpret that information to channel what the business need is. So if I say that my balances are running off, I don't know why my consumers are paying more than necessary ...

Eric   You see the symptoms but you don't know why?

PAR10   Yah. I need this person to look at the data and give me a couple of theories. In which case it works beautifully. If I see that this person is weak - cannot do that interpretation, then I take control and say, "Just take a look at this data and tell me what it is."

Eric   You wish you don't have to take control?

PAR10   Yes, I don't have to take control.

Eric   OK.

PAR10   So now this lady who has taken over is very good.

Eric   This lady is in Decision Management [BI&A team]?

PAR10   Yes, she is in Decision Management. But I went and interviewed her.

Eric   So she's in PAR6's [ORG3 MY BI&A team] team?

PAR10   Yes, she's in PAR6's team. I personally made it my job and told him that I wanted to interview the Decision Management person [who will support my business], and he identified a few, and I went to Singapore and interviewed 3 people, and I selected 2 of them, and this person joined and it has worked out fine. So on the hiring side, if there is a joint decision between Decision Management and business to say this person's profile will fit, then there's a lot more comfort in giving that person assignments like, "You come up with

solutions for me." And then if you want to churn that data, you want to outsource it, I don't care. Show me the final product.

Eric   So basically what you want is somebody who can deconstruct the symptoms …

PAR10   Yes!

Eric   Generate practical or realistic hypotheses …

PAR10   Yes! And say "Why".

Eric   And exactly how those hypotheses are validated, how you fetch the data, you don't care. You [the analyst] figure it out, and ensure that the results are timely.

PAR10   Exactly. I'll give you an example so you can construct it: we went into the personal loans business 2 years ago knowing that the regulators are restricting our balances; so I started it 2.5 years ago. Today it does $100 million ANR [receivables]. From scratch; from zero. But we went to the same base of customers - the credit cards base. The proposition that I said, as a business guy, is that with the personal loan, I should be able to give higher ticket size and longer tenure loans which normally we don't do in [credit card] instalment lending. Instalment lending has smaller ticket size and shorter tenure. For example, your car tyres are worn out and you want to replace the 4 tyres, you can go with an instalment lending. But if you want to redo your kitchen or improve your home, it cost you $80,000, you take a personal loan. Needs are different. But my boss is not a cards person. She comes back and say, "You are cannibalising the same customer. Why do you need 2 products?" And the region came and say, "You don't need Ready Credit [overdraft line], you don't need personal loan, you don't need instalment lending on cards." But I strongly believe that people compartmentalise their spend. They do! Without your knowledge, they do. They may not want to spend on this card because they use it all the time; there may be a card they don't use and they load it up with instalment lending. But I had to prove it. Then you have to look at it from the sales person's perspective. It's easy for the sales person to sell instalment lending because the rates are competitive and its short-term - "Sir, it's only 4.9% for 12 months, do you want to take the loan?" If the guy says "No", then the sales person says, "I have a 36-month or 60-month loan, but it's at 6.9%. The payment is very low." So the longer-term loans focus on the payments, if you have the need. But I have to tell that problem to the Decision Management person and say, "Look. I'm selling different needs to the same person. It should not be cannibalising. They may take a personal loan and they may decide next month to take an instalment loan also." So why should it be coming as one versus the other. I still built a $100 million ANR on RC, $110 million ANR on personal loan, from the same customer base, and I've held my ANR on cards. So that is a win-win situation. But Risk [Management] came back ... you know how Risk is ... "Why do you need so many products? You don't need them."

PAR10   So in this situation, Decision Management did an analysis to prove the case. Now Risk took away some [credit] lines which hurt me. When you take

away the lines, there is nothing to sell. And when there's nothing to sell, your loans don't build. Why take away the lines just because it is unused? My view is that if you are qualified, the line should be with you all the time. Your need may be today or 2 years from now. If it's 2 years from now ... we requalify every month anyway. So you decide to draw on the loan. But if you take away that line, I have to go get it again which is a massive exercise in a regulated environment. So we went back and forth. So Decision Management came up with a very good analysis - because she understood the problem. And she said that actually, everything on personal loan is incremental; we would not have gotten it if the product was not there. If you don't understand that, and I had given it directly to someone in Bangalore [ORG3 offshore BI&A team], they would not have been able to do it.

Eric   And the reason she could do it?

PAR10   Was because she was sitting with us; day-to-day in our staff meetings. She understands the problem.

Eric   But before she came to you, was she already knowledgeable or did you have to train her?

PAR10   She came with some experience. That's why we picked her. Her experience was in Risk Management and Decision Management.

Eric   So she understands both sides of the issue.

PAR10   Yes. But it's very difficult to find that combination.

Eric   You've seen ORG3 from a very on-shored Decision Management function to now where it is mostly offshored (to Bangalore). So even if you have this lady who is able to translate your needs and concepts, and she puts it out into Bangalore, does it take longer to come back? Is there a quality issue?

PAR10   I expect her to manage that quality issue. I say, "Give me quality work. Because if it sucks, I'm going to tell you. You are responsible." But when I didn't have that person [lady] and I had a junior person before, the quality sucked. And not only quality sucked, but it was just not relevant. I had to make some sense out of the information that came out. And in some cases, I would say that "this was irrelevant information, why are you wasting my time?" And this happens because of one of two reasons - either the senior most DM person didn't have the time to spend to guide the person, or middle management was not there to facilitate business-related interactions. The junior most guys don't have the experience to understand what I was asking.

Eric   They see the data but they have no clue how to interpret …

Eric   Today, you are right at the top of the business chain. And you say you need to solve for your lending problem and all that, you may give this instruction to your subordinates. And then your subordinates may in turn give this instruction to lower subordinates. By the time it filters down to Decision Management, do you then see that it [the interpretation of the request] gets compromised? Because your people may also not understand what you are saying.

PAR10   It does to some extent. But I think if you have a strong Decision Management head for the business, this problem will be mitigated. If I have my counter-parts to my one-down in Decision Management, then I see that [mis-interpretation] happen less. Because she still controls her team. She may say it doesn't make sense. I can tell her, "Look, next time if this happens, you tell me first." But if that level of knowledge is not there, then it does have a problem going down the chain.

Eric   But it's also because she has access to you.

PAR10   Yes. But what I've seen is that having a senior person there, even my direct [reports] get a benefit. Because even when I say, and what they do to share it with their counter-parts in Decision Management, because there's that same level of knowledge and experience. So the information doesn't get lost in translation. But if there's a junior person on the other side [Decision Management], which was our problem for a long time, and I took interest in personally making sure that I interview the person ... if I didn't do that, I would always have things getting lost in translation.

Eric   So you were getting accurate data but it was not relevant, or it didn't address the business problem.

PAR10   No it didn't fit. Because they would have gotten data that was not the right pull of information. For example, in this particular case [the cannibalisation issue], if you didn't go and look at the customer level how they have borrowed in the last 24 months, and have they ever borrowed instalment lending ... and now that they have personal loan has the instalment lending come down? Has the [credit] bureau balances come down? If they didn't do that level of understanding, they would not understand [the problem]. If they [Decision Management] had just come and told me that these customers never borrowed before and now they've taken up a personal loan ... has their behaviour changed? And what do you mean by behaviour change? So you need to have that depth of understanding.

Eric   OK.

PAR10   I'm not sure if I'm answering your question, but what I'm saying is that if I had to deal with Bangalore directly, I am sure there will be a lot of mis-matches.

Eric   And you wouldn't want to also …

PAR10   I wouldn't want to because the 'language' that they speak … my Decision Management with the Decision Management in Bangalore is far smoother than me speaking remotely to a Decision Management person in Bangalore.

Eric   I'll ask the question a little differently. Today, Bangalore is unique in the sense that it is a pure offshore entity which is not embedded in any business. It's a 'CoE'. But if a part of PAR6's Decision Management team was in Singapore rather than Bangalore, meaning that Singapore Decision Management [embedded in their local business] provided additional auxiliary support ...

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PAR10   It could work. But I still think there would be some loss in translation. The day-to-day interaction with the business is very important. Because as I'm seeing some problems and presenting it to my stakeholders, if they [Decision Management] see the same pain and I say, "Look, I need this solved.", they will go and figure it out.

Eric   And they know who to ask? They may ask Operations …

PAR10   Exactly. And they'll get the data. But if he's sitting in Singapore and he doesn't see my pain point … it's different you know.

Eric   But today, PAR6's team doesn't sit next to you anymore; they've shifted floors.

PAR10   They did. But they still come to my staff meetings.

Eric   But them shifting floors, has it impacted you?

PAR10   No. Because so long as your interaction model is close … one, they have access to my staff meetings … every 2 weeks we do a full meeting with all stakeholders and we go through all our business propositions, whether it's Risk, Decision Management or anybody. So they know what projects they are working on. And what could be a pain point.

Eric   And the staff meeting is where they get clarity on what is required?

PAR10   Yes.

Eric   Without the staff meetings … if you only had emails say, and you send minutes of staff meetings …

PAR10   It won't be as clear. Because there will always be some slippage. If I tell my direct reports, my direct reports will still go and meet the lady from Decision Management. They will have a lot of interactions. It's probably 90% effective. But if there's slippage between me and my direct reports, there will be slippage between them and Decision Management. But if every 2 weeks I sit and say, "Look guys, this balance growth program is the most important thing, it's what we are looking to solve", it reinforces what is required.

Eric   OK.

PAR10   So they [Decision Management] come to me and say, "Can you re-prioritise all the projects for the next month?" [In response to the current focus.] Because they know where to put the resources. So I tell them, "This is the most important thing." So I sit in their prioritisation for example. I would like to get preliminary reports to avoid excessive work going in the wrong direction.

Eric   OK. Now in the world of Decision Management or Analytics, you can think of it as largely 2 types of activities - you have the operational type of analytics like MIS and Campaigns, and then you have the datamining, hypothesis-type of analytics. What are your thoughts about the operational

analytics being offshored (in ORG3's case to Bangalore)? In the past, your Campaign capability was here. One can even argue that Campaigns are not straight-forward ...

PAR10   Yah.

Eric   Do you see that challenge? Must Campaign be on-shore for you? Must MIS be on-shored and close to you?

PAR10   No, no. As long as people can clarify upfront what they want, and they do it or automate it through the back-door, I am fine. As long as the MIS comes on time.

Eric   So for you, timeliness is the most important thing.

PAR10   Yes. But Campaign analysis and understanding what we have to do to go forward has to be fairly closer [to the business] rather than remote.

Eric   So today, with Campaigns offshored to Bangalore, is that an issue?

PAR10   I wouldn't say it's an issue. Probably productivity-wise, I may not get as good as having it stay on-shore. But if it was very efficient … say, again technology can provide a lot of solutions. If you have a Skype call with the people and say this is what I want, and if they participated in some of the business discussions on laying out what the objective is, maybe they'll be as good as somebody sitting next to me or one floor above or below. Right now, the way we are working is PAR6's team has shrunk but they are still our main interface. PAR6 decides what work gets offshored to Sandeep, and he manages all that workflow. So I don't care; it's transparent to me; as long as the work gets done. But when work doesn't get done and everything gets delayed, then I ask PAR6 if there's a resource shortage and if I should speak with Sandeep directly ... and PAR6 won't want that to happen, so he will optimise himself. I think this was a regular conversation that I used to have 1-2 years ago. When you have a knowledgeable person who's there [e.g. the lady in Decision Management], that conversation has gone away. Because all irrelevant work will stop. She manages it very well. I think having a very business-oriented Decision Management person close to the business improves your productivity 100%.

Eric   In some sense, she is a Relationship Manager?

PAR10   Yes. But if you only have a relationship manager who only passes on data …

Eric   He or she also has to interpret …

PAR10   Yes, she has to interpret. And she has to have a stake in this. Because when I go to Sergio [PAR10's regional boss], I make her present.

Eric   I see. She's not just a pass-through.

PAR10   No.

Eric   Like Technology would have assigned relationship managers but they don't
          necessarily take ownership of the project.

PAR10   Yes, this is different. She explains what she has done [in analysing the
          problem]. But we would have vetted it, and so we understand the pluses and
          the minuses.

Eric   But if you are getting into new spaces where she doesn't have experience in,
          like let's say you want to get into more Digital, then how do you deal with
          some of these ambiguities now?

PAR10   If she has the skillset, I don't mind training her. I don't mind figuring out
          with her what the model needs to be. Of course you invest in every new
          business. Maybe you'll have to bring relevant skillsets below her. But I think
          if you have the basic knowledge and skillset, you should be able to do [new
          domains]. That's my view.

Eric   OK.

PAR10   If you have the skillset and knowledge, nobody can take that away. It's a
          matter of how you interpret the information. 20% of the information will
          give you most of the insights. The question is, did you pick the right 20%. If
          you did 200% work but you didn't have that 20%, then you cannot figure out
          the conclusion. So it's very important that between me, my directs and the
          Decision Management person that you capture enough information that gives
          you that 20%. Sometimes I can't dictate to you which field you have to go
          and fetch or what you have to do. That you have to figure out for yourself.
          My view is that thought leadership should be in the country.

Eric   So even with the rise of big data and all, you don't necessarily see a rise in
          knowledge.

PAR10   Yah! Because the guy who brings it together … the integrator … is still not
          there. You can bring in a lot of data but if you can't make sense of it, what
          am I going to do?

Eric   Yes, data doesn't make sense by itself.

Eric   So that's good. We will end the interview here in the interest of time.

Participant Code	PAR11
Title	Country Head of Credit Cards and Personal Financing
Organisation Code	ORG5
Date	March 30, 2016
Legend	[xxx] implies redacted due to participant confidentiality

Person	Transcription
Eric	Eric thanked PAR11 and explained the BI&A organisation design research.
Eric	So before we start, can I get you to share a little bit about your background, experiences and the number of years you've worked with analytics functions?
PAR11	Thank you for the opportunity to share with you. I have 15 years of working experience in the banking industry, especially in consumer banking. My experience is primarily in the unsecured consumer lending which comprise of credit card, personal financing, unsecured loans. I have done roles in acquisition to sales & distribution, leads management and portfolio management. In my current role, for the past 6 years, I run a monoline operation - which means it comprise of decision science, customer service, as well as credit & risk management, including call centre services. So, in my current role, I manage end-to-end so long as it touches credit card, personal loans and unsecured lending business.
Eric	That's great. You mentioned that you have this function in your organisation called Decision Science. Is that how you think of business analytics? I've broadly used the term Business Intelligence & Analytics because many people look at it in different ways. Some people call it data science, or decision science ... in ORG3, we used to call it Decision Management. What is Business Intelligence & Analytics to you? Is Decision Science the right construct for you?
PAR11	Actually, the reason why we call it Decision Science is because of my work history with ORG3, where you ran the function called Decision Management. So I borrowed the name and added the 'science' part to it.
Eric	So the function [in ORG5] is formally called Decision Science?
PAR11	Yes it is. But the important thing, regardless whether it's called Business Intelligence or Decision Science or Decision Management, the key objective for us is to extract lower cost and higher business benefits through analytics.
Eric	Which function does your Decision Science supports?
PAR11	They support each and every stakeholder, starting from the Sales & Distribution, then Portfolio Management, then Upsell/Cross-sell, including Credit Management. So it's end-to-end.
Eric	Even the Operations side? Even the Call Centre?
PAR11	Yes.
Eric	What about Risk?

PAR11   Yes, it does help Risk in terms of building the scorecards.

Eric   And is the head of Decision Science part of your senior management team? Does he sit at your management table or sit with you?

PAR11   Yes, he is part of my senior management team. He directly reports to me. The reason why I have the function report directly to me is because it is important for the business head to drive it, otherwise Decision Science will not have the right focus.

Eric   And this is from your personal experience?

PAR11   Yes, it's from my personal experience.

Eric   So you say Decision Science has to report to you rather than your one-down?

PAR11   Yes. Correct. Absolutely.

Eric   If Decision Science had reported to your one-down, what would have been the issue?

PAR11   Probably the focus and importance will not be that much. The stakeholder emphasis on analytics will not be there. And the moment the stakeholder emphasis is not there, in terms of executing the thoughts or ideas or analysis of the studies, it will lose its intensity. As it goes down to a junior level, people may probably not understand why we are doing this thing.

Eric   So you are saying that even if Decision Science reported into your 'right hand' - a trusted subordinate, that one-down may not get the full context of what you want.

PAR11   Absolutely! That's from my personal experience too.

Eric   So there is 'transmission loss' in knowledge or interpretation of the business problem, even though its one step away?

PAR11   Yes. It matters.

Eric   So your head of Decision Science has to sit in all your meetings to hear it, in some sense, from the "horse's mouth" to get the context of the business objectives and the business challenges?

PAR11   Exactly. That's what's happening today. Decision Science sits together with me in all the meetings. Another thing is - one of the problems is that historically Decision Science unit was seen as a silo-ed unit. What I mean by silo-ed unit is basically they were viewed as just crunching data and numbers. But I take a different view. If Decision Science is not part of all the business meetings, they will not be able to correlate the problem and the challenges all the stakeholders are experiencing. By having Decision Science sit in the meetings, they are able to link up all the problems and offer solutions at each and every stage.

Eric	But does that mean the Decision Science team has to be a far larger team because now they spend so much of their time in meetings and discussions - so who's doing the work?
PAR11	Actually not really. For a size like my business, I have about 8 people in Decision Science, supporting about 200-300 reports … yah, maybe they are little stretched, but it's not necessary to have a huge team.
Eric	But not everyone of the 8 persons in Decision Science interface with you, right? Is there a hierarchy where some people are involved and some are not?
PAR11	It depends on the context of the business meetings. Our Decision Science structure is further segmented into Modelling, Campaign Management and Collections Scorecard Management. If I'm having a review or meeting with credit management, then the Decision Science head and Collections Scorecard Management lead will attend. If I'm having a meeting on sales performance, campaign performance, leads management, then the Decision Science head and Campaign Management lead will attend. If it's a meeting on portfolio monitoring, modelling and optimisation on upsell/cross-sell, the Decision Science head and the Modelling lead will attend. But ultimately, my Decision Science head will be in most of the meetings.
Eric	So there's a vertical structure within the Decision Science team. Is there a horizontal structure - like say, these are all the people who do MIS [reporting], these are all the people who do campaigns that support everyone. Or the teams are all verticals?
PAR11	There is a horizontal also, but because of the size of the team, people are sometimes double-hatting. But within Decision Science there is the MIS function that cuts across all of the teams. So the way I structure is that I separate the Business Planning & Analysis from the Decision Science. Before that it was combined. So the BP&A function primarily runs the P&L and MIS across the entire business. While the Decision Science primarily supports campaign, leads management, modelling & optimisation, scorecard optimisation ...
Eric	And there are separate heads for BP&A and Decision Science?
PAR11	Yes, separate heads.
Eric	And the reason that you have these 3 verticals in your Decision Science (Modelling, Campaign, Collections Scorecard)? Was it based on some kind of evolution?
PAR11	This is over a period of learning. When we first set up the business, we set up Decision Science without any variation - all of them were just analytics. A general pool kind of thing. Then over a period of time, we realised that having a generic pool cannot suffice for the business. Initial stage I think it's fine, but as the business grows, we need to have a segmented, differentiated skills.
Eric	Why? What does that bring you?

PAR11   If you look at all the people within Decision Science, the basic requirement is skills in SAS, statistical knowledge and mathematical knowledge. These are 3 things we see. But on the other hand, there is another quality that I see - personality or aptitude towards the skills. For example, Campaign Management guys, though they are analysts, their job is primarily extracting the data, analysing and putting it into performance tracking. Whereas the Modelling & Optimisation guys, they need to think and create, and not just putting together numbers. That's how I see the differentiation.

Eric   So this 3rd Decision Science vertical [Collections Risk Scoring] came about because of where the pressure points are? Because you needed more people to do say risk scoring or collections scoring, and it became a unique requirement …

PAR11   If I put that as a business problem, it comes exactly like pressure point but to improve the cost-to-income ratio. Pressure point is nothing more than having a KPI growth, you need to bring it down. We had to change how we did things historically. We couldn't call everyone. We had to differentiate those who had the propensity to respond (upsell/cross-sell), and modelling really helps.

Eric   As an analytics practitioner, my view is that modelling is the end stage of the problem-solving process. Because in most cases, the problems you express need to be unpacked. And then there's a lot of exploration and discovery, and hypotheses generation. And then when everybody agrees "This is how I want to solve it", then can I solve it in the best possible way with maybe a model. So does your Modelling & Optimisation [Decision Science] team get involved in hypotheses generation and data exploration, and problem deconstruction?

PAR11   They do get involved in all these stages. Because as I mentioned earlier, the Decision Science head unlike other functions, will be involved in each and every business meetings. With his involvement in each and every meeting, he then further cascades down to his subordinates the challenges and problems, and the assumptions and hypotheses.

Eric   So he's the one developing the hypotheses?

PAR11   Yes.

Eric   And not the subordinates necessarily?

PAR11   There is one layer below the head of Decision Science. That person will be helping the HOD to develop the hypotheses.

Eric   Does the size of the Decision Science vertical grow and shrink depending on the opportunity from the business and the required support?

PAR11   Yes it does. It's the same thing - we will re-mobilise resources based on need. But sometimes, the challenge is the required skillset …

Eric   Because with the verticals, people may not be as transferrable across?

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PAR11   Yes, there's pros and cons. If we want to move it, we will have to compromise in terms of quality a little bit. But given that the business is quite smooth in terms of the growth trends, it doesn't create any radical strain on the approach.

Eric   I'm going to now show you a construct. Typically, in the space that Decision Science adds value, problems go through this chain of process: business problem gets translated into a data problem; data problem gets translated into a data solution; and the data solution needs to be re-translated back into a business solution. Now, during the translation of a business problem into a data problem, things can go wrong. It requires a lot of interpretation as to what is the business problem, finding the appropriate data that expresses or is proxy to the business problem; the same data in different context can mean very different things. Do you see a lot of ambiguity in this space and how do you go about resolving these ambiguities? Because you may not always be right in your articulation of the business problem, and someone may revert and say that actually the problem is something else. So, how do you manage convergence of thoughts from business problem to data problem?

PAR11   Actually, I would say this is a pertinent and recurring problem on a daily basis. Because in each and every business problem, when you deep dive into the data problem, when you analyse it, there is never a correct or accurate interpretation. I may interpret in a different way; another person may interpret differently. At the end of the day, we evaluate amongst all the different interpretations which has a better fit.

Eric   How?

PAR11   For example, if you want to increase the revolving balances of a customer so as to increase our interest earnings and hence business income. At the same time, we may be offering this same customer segment balance transfer or instalment loans on their cards, and these carry a lower interest rate. So there a cut-off point of utilisation rate where if you don't offer the lower interest rate product you would be better off. The question is whether the customers would accept the offers - whether we are able to predict appropriately that at a particular utilisation rate, the customer will revolve at a higher interest rate or will he take the lower interest rate product and pay off his higher interest rate outstanding balances? Predictions and simulations [in solving this problem] are one thing, but one can argue that the while the customer may not be able to take lower interest rate product from your bank, he may be able to take a lower interest rate product from another bank and pay off his higher interest rate balances with your bank; and you may not be able to predict this behaviour. Because your predictions are limited to your own data. And that's always a big challenge. So while we data mine our own data and we conduct test & learn exercises, but customers are different and the eventual results may not be what we predict would happen or desire.

Eric   But that's a question of how complete your modelling and simulation is, isn't it? Whether you've incorporated sufficient internal and external data. And in this example that you've mentioned, where you are figuring out the 'turning point' at which it makes marginal sense [incremental value] to do it, and

people may have different opinions about that, and they may say that it's an academic argument but the real world doesn't work like that ...

PAR11   We really do get a lot of those kinds of discussions and opinions. But we will look at the historical results to substantiate those opinions. Ultimately, we add our intuition and gut feeling to this analysis and simulation. Because consumer behaviour changes and historic data may not reflect this - whatever has been done successfully in the past may not be successful now. So that's how we make decisions.

Eric   So you get people into a room, get them to share ideas, pull some historical data to support those ideas, and agree how to converge on the different interpretations when you translate a business problem into a data problem.

PAR11   Yes, correct.

Eric   So now when we look at the stage where a data problem become a data solution … let's say in your example where you are looking to understand the utilisation … somebody says I can build you a segmentation model, or I can build you an economic model, or I can build you a price frontier model, I can build you a response model, etc. Which data should I even look at express the correct attributes that you want in the business problem. Do you see a lot of mis-interpretation, mis-understanding, ambiguity?

PAR11   Actually, yes.

Eric   Because when they come back to you, they say "I thought we agreed on this, but now it's different?"

PAR11   Yes, it does happen very frequently to be honest.

Eric   Very frequently?

PAR11   Yes. When I say 'very frequently', it's because of the huge amount of data available [for analysis]. When they take the data problem and come out with the data solution, it is based on the interpretation of the analysts / decision science guy. The business stakeholders may have different expectations and assumptions, even though the decision science team may have clarified during the discussion that this is what the stakeholder want, but when they [decision science team] go back and work on the data, the outcome may not be what is desired. Also, it could be due to the complexity of the data, because there is so much data to look at. Today we have internal data, we have external credit bureau data, we have public data, and data from the association like MasterCard and Visa. So, one data says one thing, while another data may say something that's conflicting.

Eric   So the data itself has conflicting interpretation … at the surface level?

PAR11   Yes, at the surface level. So when my decision science head offers a solution based on these 5 datasets. But when you think of running the proposed solution within the business, you may feel that it's not logically sensible.

Eric	OK, so what you are saying is that the data doesn't 'speak the same truths'. They present different perspectives and in doing so, it looks like it's conflicting each other.
PAR11	Yes.
Eric	So in such a case, how does the business stakeholder mitigate and overcome such conflicting interpretations?
PAR11	Given all the data sources, we place most emphasis on our own internal data. And we try to reduce the uncertainty as much as possible.
Eric	Given that this is a common problem, are there different types of organisational mechanisms that you employ and evolved over time, given how the decision science team has built those interaction capabilities with the business stakeholders and IT, to reduce these 'mixed signals'? So for example, you may say that you always need the decision science team to playback to you by building you a prototype or simulation model, and you rotate the decision science analysts across different sub-team so that they get a better sense or a more rounded interpretation of the business?
PAR11	Actually, what I believe, which is also what I practice, is rotating people across different roles.
Eric	Rotating within the decision science team or outside of the decision science team also?
PAR11	Outside of the decision science team. The reason is that if the person is just limited to being in decision science, your thinking is purely analytical. But by rotating and spending time outside of decision science, you get a better understanding of the practical problems on the ground and how you handle it.
Eric	OK. Let's look at the translation of the data solution to the business solution. You can build a very nice model but you can't implement it.
PAR11	Correct. Here's a simple example. I rotated my previous decision science head [xxx], who was previously much more focused on campaign management, into business planning & analysis, and into products & services. So he has a more holistic understanding of the business.
Eric	Is this person your head of decision science today?
PAR11	No, he's no longer my head of decision science. He's now the head of product services. Another person [PAR7] is assuming the role of head of decision science.
Eric	So this is part of his [xxx] rotation and development towards solving bigger and more complex problems.
PAR11	Correct.
Eric	But most analyst don't want to be rotated, right?

PAR11   Actually you are right. Most analyst don't want to be rotated because they want to be in their comfort zone. But eventually it comes down to how much the boss is willing to support and give opportunities for the people. If you look at it from the larger perspective, no analyst wants to remain just an analyst for their entire career. There will always be exceptions of course, but in general, every human being wants to progress to something bigger over their lifetime. But there is always a fear factor in them [analyst] that if they are out from the decision science area, will they be successful? And will my career be 'tarnished' because I'm a specialist in analytics. I've had this experience while rotating my folks. But you need to be supportive and tell them not to worry - "this is for you to learn and expand your horizon".

Eric   To catch them when they fall.

PAR11   Yes, to give them a safety net.

Eric   And do you find that these decision science analysts generally succeed when they move into the business?

PAR11   Based on my experience, one of the in-built quality or attribute that they have is that they [analysts] are more conservative and introverted. So one of the challenge is to improve their personalities to be less introverted; not necessarily extroverted but 'normal'. And if you can overcome that, then my opinion is that an analyst-turn-business guy is much better than a 'pure' business guy or a 'pure' analyst. And analyst-turn-business guy will be able to see things from 2 perspectives. Which I think is good.

Eric   From what I understand, there are a lot of different problems that you ask the decision science team to shed light on. Are there problems that you wouldn't give to your decision science team; that you feel that they cannot do?

PAR11   Yes and No, depending on the organisation structure. Today, because the structure is such that the decision science team is under me, I don't mind giving to them any of the things I want to do. But if the decision science team was differently structured and not reporting directly under me, then the business units may be uncomfortable to involve them in all kinds of business problems; the business units see the decision science people as the data analytics guy churning the numbers and not involved in decision making.

Eric   You are part of a larger group function. So if the decision science team was only dotted line [reporting] to you, and hard-line reporting into a group-level decision science organisation say, would you feel less comfortable?

PAR11   Yes. Honestly yes.

Eric   But wouldn't it be better from the decision science team's perspective as they have access to a broader pool of best practice sharing?

PAR11   Theoretically yes. But from a practical standpoint, I am not sure. Because there are lots of variations market to market. Conceptually having a larger pool of experience and resources, it is good. But from an individual country perspective, no matter what, the country's priorities are important. So when

	you go into this group structure kind of thing, country priorities and immediate needs are ... the group might not have that level of understanding to deliver the desired output.
Eric	Are you currently swapping and exchanging [decision science] talent between Singapore and Malaysia?
PAR11	We don't have the practice of swapping the people, but we have a practice of learning best practices from each country. So let's say certain models or campaigns have been implemented successfully in one country … On a regular basis, we have a regional decision management [science] community, and on a weekly and fortnightly basis, they catch up and share what has been implemented as a best practice. Countries may adopt if it's applicable to them.
Eric	This vertical structure that you have within your decision science team, is it the same across the other countries?
PAR11	Not really. Country to country is varies.
Eric	And having this difference, in your opinion, is good?
PAR11	Having this difference is not good. Meaning if countries have different [decision science] organisational models, it's not good. It's not good because it creates inconsistencies in the reporting across the countries. It creates problems in standardisation of information and formats. Let's say in one country, decision science team is part of finance, and in another country it is a stand-alone unit, and in one country, it is directly under the business unit. As such, each decision science team will interpret their data in their own respective context. Say a P&L item like loan loss provisioning - each country has their own definition. It was painful and it took a lot of time to standardise that across the countries.
Eric	But isn't the loan loss provisioning driven by each country's regulatory framework and of course there would be differences?
PAR11	Regulatory difference is ok. But there were non-regulatory differences as well.
Eric	And you believe these non-regulatory differences are there because the [decision science] reporting structures are different? That people have defined it in support of where they report into?
PAR11	Correct! To a large extent, I believe that.
Eric	So even definitions for good/bad customers, active/inactive customers would depend on where the decision science team reports?
PAR11	Yes, it also varies. So we are at the stage where we working to standardise the reporting in the past one year.
Eric	That's interesting. Within this decision science, would you consider offshoring any of the work? OK, let me clarify: let's say your decision

science team is too expensive and to build more capability without the supporting budget, would you consider offshoring some of the work, and what type of work would that be?

PAR11   I believe 80% of my decision science capabilities can be offshored or outsourced. I would strongly consider doing that.

Eric   Really? But you are so proud of the decision science team that you've built!

PAR11   These are 2 different things. I'm proud of the team I've built. But on the other hand, can I get better talent by offshoring or outsourcing? So for countries like India or China, they have a bigger and better talent pool than what we have in decision science team today. They have lack of market understanding, but their technical skillset in modelling and data management and campaign is far, far better than what we have. Today, we have a problem with building good models. And the cost in Singapore is such that you can hire 5 guys in the other countries for the 1 you have in Singapore. So purely from a business and practical standpoint, it makes sense to offshore. There will be some issues with communication and connecting with the people when we offshore. Having a person right beside you does matters but in a global world today, I think we can find solutions around. If I had to look at it, decision science would be my top priority for offshoring / outsourcing.

Eric   Earlier in our conversation, you mentioned that it's important that your head of decision science sits with you and is participating in your management meetings. How will the person participate in your meetings or gain context to your business challenges if they are offshored / outsourced?

PAR11   It does not mean that you are offshoring / outsourcing 100%. I say 80% only. The head of decision science and probably 1 or 2 guys can still be in-country, and the rest of them can be offshored / outsourced. So the in-country people will act at the medium to understand the business and working with the offshore / outsource team to get the desired output.

Eric   We spoke about translating the data problem into a data solution. When you offshore / outsource, there is a loss of 'fidelity' in the interpretation of the data. So far, with the folks that I've interviewed, most of them have done some kind of offshoring. Down to the last man, they are not happy with their offshoring. They say they will continue because it's cost efficient, but quality has suffered.

PAR11   Although I have not offshored / outsourced as of now, but I believe definitely quality will suffer. Because at the end of the day, having physical presence makes a difference.

Eric   But you are prepared to take a deterioration in quality in exchange for larger capacity? You are prepared in your mind to accept that?

PAR11   Yes. Today, in decision science, although we say we are leveraging a lot, we are not 100% sure that what we are doing is accurate or not. So the deterioration of quality with offshoring / outsourcing would probably add to the ambiguity and reduce the accuracy of the decisions.

Eric	You feel that the ability to manage data is weaker here, and that you can't even get to the space of interpretation because they are already struggling just to manage data?
PAR11	Yes.
Eric	And so if you can manage it better through an offshore unit, maybe you can get to the next phase of trying to interpret it better?
PAR11	Yes, possible.
Eric	So more than anything else, it's really about talent availability. And if cost efficiency was there, you would rather keep it close to you as much as possible.
PAR11	Yes.
Eric	And when you talk about talent deficiency, you are looking at it from a technical talent perspective as opposed to an interpretative …
PAR11	Yes, more from a technical talent perspective.
Eric	Maybe someone who can extract fast, run the statistical computation quickly, and leave the interpretation to you or your business seniors to drive that.
PAR11	Correct!
Eric	So that's all the questions I have. Any last words?
PAR11	I believe decision science has to be integral to the business. And what I mean by this is that it has to be part and parcel of the entire business; it needs to be involved in the day-to-day business discussions. It cannot just be the person who's delivering the output.
Eric	They have to involved in the discussion upstream?
PAR11	Yes. And it has to be driven from the top management. This is very, very important. Otherwise it will become like a leads extraction or data extraction guys.
Eric	Do you see yourself as a different type of business manager? Because you came out of ORG3 and saw how the analytics environment work? And you had a very personal stake on the use and power of analytics to shape business. Do you think your other decision stakeholders are not necessarily believers in decision science / analytics?
PAR11	Yes, as you rightly mention, I see a difference in the way I interact with my decision science team versus the way the other stakeholders interact with them. The other business units [outside of cards and loans] also have team call data management or similar. The way they utilise the team is primarily for data extraction, and only when there's a need to extract the leads for campaigns will they raise some request. They never involve the team in the day-to-day discussions. The difference I see is that in my team, they are part of my daily process and discussions. Even though there may not be a direct

relationship to the data extraction or modelling or statistical computation, from a business standpoint, they understand what I'm driving at.

Eric   They have a history of the problem context?

PAR11   Yes. It makes it easier for them to offer a solution.

Eric   Eric thanked PAR11 for this time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections. And to indicate areas which are sensitive and should not be re-produced.

Additional interview on Feb 22, 2017

Eric   What does BI&A mean to you?

PAR11   To me, BI&A is like our brain. If we wanted to perform some activities, the way we think about the best possible way to execute it. So in the same manner, when I'm running the business, BI&A will give me the most cost efficient manner to get my outputs in the way I want. For decision-making, BI&A is very key. Because you are not making decisions based on intuition or gut-feeling. But rather, combine with intuition and supported by data intelligence.

Eric   So if I may paraphrase, BI&A is about driving efficiency, whether its cost reduction or revenue growth … making better decisions?

PAR11   Absolutely.

Eric   How would you define success of your BI&A function?

PAR11   Honestly, defining success of the BI&A function is a grey area. Because there is no clear dimension. For example, when you look at a campaign outcome, you can say that the performance was due to business intelligence, but it could also be due to market conditions or other circumstances and customer behaviours. So there may be other factors to it. Of course you can set up test and control groups to control for these factors, but for me, I don't always believe the improvements are purely due to BI&A. This is just my experience.

Eric   Eric thanked PAR11 for this time.

Person	Transcription
Eric	Eric thanked PAR12 and explained the BI&A organisation design research.

Eric

As a start, can you share your background, experiences and the number of years you've worked with the Analytics team?

PAR12

I've been in Banking for 23 years, consumer banker through and through. I've done various functions - started out in ORG3 as a product management, marketing, segment, then went to distribution, became a branch manager, then a cluster head, and then a distribution head. And then moved to ORG1 as a distribution head (for onshore and the small offshore unit that we have), then also regional Premier Banking, then took on the role of head of consumer banking for Singapore 3 years ago. In the various stages of my career, I've had the opportunity to work with the Analytics team. In the head office role (product, segment, marketing), it was to understand customer portfolio. Then in the sales & distribution role, it was around sales incentive and how you change salesforce behaviour. That's my early years' exposure to analytics. Then when I joined ORG1, initially for Premier Banking and now for overall consumer banking, for ORG1, the Analytics function is very embedded; culturally it's so strong. And this is historical - it's been 10 over years. Previously [xxx] and now PAR1 runs the Analytics team. Actually the Analytics team used to be part of consumer banking. So PAR1's current team was part of consumer banking and has been a very strong pillar for the consumer business. So the DNA of all our managers across the departments, they are all very entrenched in analytics. Of course there is always room for improvement, but the basics are there. Then a few years ago, to elevate the importance and value of analytics, we moved PAR1's team to the Group level and became an enterprise group-wide function. While it's sad for the consumer bank, it's also a good thing for the organisation. Because now when I work with them, it's no longer just consumer bank centric. Because it's at the Group level, they also do analytics and have access to other part of the larger organisation, such as [ORG1 insurance subsidiary]. And because we are key partners with [ORG1 insurance subsidiary], PAR1 is able to match data from both our organisational entities together. Of course we respect and preserve the confidentiality of data. And the insights are so much richer for us as an organisation.

Eric

That's very good. To level-set, the word 'Analytics' is oftentimes bastardised. For the purpose of this paper, I've the collective term Business Intelligence & Analytics, which is meant to encapsulate the entire spectrum of analytical work, whatever it means for the person. Perhaps you could share what Analytics means to you?

PAR12

It's working with data to translate it to insights, into business actions. It's about how you get hold of raw data (internal and external), match it together, do some form of segmentation or analysis. The output ultimately is about

	helping us understand customer behaviour and consumer thinking. So Analytics in a company must have business output.
Eric	How do you have business output? Do you feel that the Analytics team has to own the execution?
PAR12	No. The business must own it. The company will only be successful if it truly believes in the value of the analytics team. The analytics team is not just there to provide some MIS [reports] or show some numbers. Because if that is so, then it's no different from buying books or intelligence reports to read. But here, because they are so intertwined with the business, and if they are able to spit out the insights from the data, then what I'm saying is that the business must own it, they must be committed because we have this analytics team, to use this as a differentiator compared to competition. We'll use this to better understand our clients and to therefore serve them much better. And that must be owned by the business. That, to me, is not owned by the analytics team. Because to be fair, the analytics team will do all the work to understand the KPIs and insights, but in the end, if the business doesn't act, then it's not fair to them.
Eric	OK. So there's a [corporate] cultural element to this; there's a top-down sponsorship. It's like a lock-and-key. So the business analytics, in the way that you've articulated it, is only truly enabled or successful when there's a lock-and-key with the business, driven by senior sponsorship and the culture of using information to drive their business.
PAR12	Yes, and the business must probably integrate and work with the analytics team as one. Not as two separate units.
Eric	Can you elaborate further? What do you mean 'as one'?
PAR12	That means you can't see the analytics team as a separate department or separate division doing their own thing. The business has a problem to solve, has got customers to serve, so we need to work with the analytics team as a partner to fully understand what goes on. That means the business must be so comfortable and trusting to share everything with them. The analytics team has full access to what's going on so that they can take the appropriate path to gather the data.
Eric	As you've shared, PAR1 is now part of the Group function, and even before the analytics team was part of the Group function, when it was part of consumer, the analytics team was a separate department. So in the 'working together', does it mean they co-share your goals. How do you 'explain' that there is an open sharing of information, that they are part of your business because they have a matrix reporting into you?
PAR12	In the past structure when the analytics team was part of consumer banking, then yes, it would have a solid line up to the consumer head. But a few years, because the analytics team was taken out to become a Group-level function, so now there isn't any solid or matrix reporting. But what I mean by 'working as one' and about the cultural fit is that how we operate today, even though the analytics team is another department or another division, they are treated no less than any other department or any other seniors within the consumer bank. Let me give you an example: I have 10 department heads under me as

I run the consumer bank in Singapore. But I will have key value-chain partners. So PAR1 is a department head, running analytics at the Group level. So even though he doesn't report to me and sits in another division, I treat him and I run my leadership here as though he is one of us. So in all my leadership meetings, he is a permanent member. Every month we have a formal leadership meeting - so he is part of that. He has the same rights as my direct reports. That's at one level. At [ORG1 Chief Operating Officer]'s level, that is, my boss' level, the same thing happens. My boss runs what he calls the Core Team Meeting where the core leaders in his business meet. So he will involve us, but equally, people like PAR1, is a permanent member there. Then as a business rhythm, I run a monthly performance review with all my key business lines. It's a cycle, it's a discipline, it's rigid, but it keeps us on track. So for example, on a monthly basis, I will have a 2-hour review with my Marketing and Segments business, Wealth Management and Premier business, the Secured Lending business, the Unsecured Lending Business, and so on. In these meetings, the department in question will be under scrutiny. Let's say the Cards business. All the key people in Cards will be there and key people from other departments will be there, plus PAR1 will be my permanent member.

Eric   Is it PAR1 or would it be PAR3, because it's Cards?

PAR12   Both. Usually both of them will be there. So PAR1 is the member, and he always comes, but in the recent 1.5 years, it's PAR1 or PAR3 and sometimes frequently both of them will turn up. And they act as my eyes and ears as well. So I give them full access to what is being discussed in the business meeting and they participate rigorously in all these meetings - because they will ask questions, they act as a sounding board. So that's what I mean when I say we work as one. We don't treat them like they are from another part of the bank.

Eric   But there is no separate organisational mechanism to force this 'hand-shake'? What I mean is that consider a Compliance director or the Group Risk director in a stakeholders' meeting and they are not directly reporting to you. Having a seat at the table doesn't necessarily mean you have the level of respect, because you can just be a passive observer. In the case of Risk or Compliance, they would enforce their rights at the table by saying that if you don't listen to them, they can enact policies that can 'hurt' you ... they can 'stop' your business. Are there similar organisational mechanisms like that for the analytics team? So if you choose not to listen to them, for example, if you move on and your successor doesn't like PAR1, what happens then?

PAR12   Good question. So structurally we don't have any formal reporting as I've said. We don't have any formal mechanism to enforce. I will answer the question in a few ways. One if what was briefly talked about earlier - it's cultural. The culture in ORG1, and specifically in the consumer bank over the past 10 years ... analytics already earned a rightful place, a very credible place at the table. They are highly respected ...

Eric   How did they get there?

PAR12   I wasn't here then. But I would imagine that the work that the analytics team did was good, bore fruit and allowed the managers and supervisors to really

understand their business. The value-add from day one must have been decent. Otherwise credibility would have gone downhill. So the quality of work that brings business results has earned them their credibility. And with the passage of time, it's the whole culture. So that's one. The second one is that analytics is formally part of the business strategy. In the consumer bank strategy, we clearly articulated 6 years ago, that the analytics function, the segmentation is key ...

Eric   It's a core pillar of competency?

PAR12   Yes. So all leaders, all 2000 of us in the consumer bank, will be able to tell you. They may not be able to say the word 'analytics', but they will tell you 'data', 'big data', 'segmentation' … these are all principles of our analytics. This is in the strategy, and I bet my last dollar, that all 2000 employees can articulate this. That's how strong it is; this is to outline my point on the culture and the strategy - that we incorporated analytics as one of the key pillars.

Eric   But is there a penalty mechanism to force you to listen to the analytics team? If you don't want to listen to them, they can take action because they control processes in the bank. For example, Risk controls the approval and they can choose not to approve. So is there something that PAR1 can do? For example, in ORG3, Decision Management would have approval for campaigns. So if they don't agree to the campaigns, the list would not be made available, and no one can have access to it.

PAR12   Lesser of that here, I would say. But I would attribute … I think this is person-specific … but I would also not deny … but one key thing is because of the sponsorship here. The sponsorship of [ORG1 Chief Operating Officer]. So [ORG1 Chief Operating Officer] is a big, big believer of analytics.

Eric   So if you don't listen to the analytics team, and this gets back to Wei Hong, there is probably some kind of punitive action?

PAR12   Yes, it has happened before. Not a major incident, but it has happened. He [ORG1 Chief Operating Officer] being the leader that he is, he's always trying to push us to the next level. His messaging is that things are always not good enough, not using enough. So even though we are engaging a lot with the analytics team, he's saying we are not engaging analytics enough. So at that level, he's a role model, where he addresses certain problems by seeking the opinion of analytics - the 'single source of truth'. He will not listen to Finance, he will not listen to ground-level leaders. He defers to 'the single source of truth' - analytics. So that's our internal culture, that's how we operate internally; that's the tone from the top. So everybody falls in line. So initially it may sound slightly punitive, and don't get me wrong, but culturally it's become a norm and people don't see it as a 'bad word' ...

Eric   It's not fear-driven anymore. It's become embedded culture.

PAR12   Yes, it's become embedded culture. And it's proven time and time again. So this is where we are.

Eric   You mentioned that in your consumer business that PAR1 and PAR3 (for Cards) are treated as part of your management team. Are there other kinds of team structures that are being employed by PAR1 and/or yourself to enable this co-working, besides them attending meetings? Are there like formal taskforces or formal project teams, or every work that needs PAR1's or PAR3's sign-off, or certain workflow processes that harden the co-working relationship?

PAR12   There are a few forums. One will be at the Operational Plan level. It's like budgeting. The plans for the whole year. At the start of the year, as a consumer bank, we say these are all the things we want to deliver in the new year ahead - all the launches, all the capabilities that we want to build, and these are all the targets. And to support that, we will need these kinds of analytics help - to understand so that we can build a new proposition, or to understand to come up with a new program to deepen relationships, etc. So those plans are bottoms-up and I will take them over to PAR1 and say that these are the plans ahead, and he will then overlay and say that in order to do that, will he or will he not have capacity to handle all of it; of course we would prioritise - strategic ones vs tactical ones. So at that planning level, we already sync up. That's annual for planning purposes. Then what I've started is that every 6 weeks, I do a sit-down session (it was haphazard a year ago; adhoc as and when) ... I didn't want it like that anymore, I wanted something more systematic ... so every 6 weeks, I sit down for 1 to 1.5 hours with the Customer Experience (CX) team. PAR1's analytics team is part of the CX team, which comprises of a few key units, of which his is one of them. So I didn't want to keep having 'bilateral' (one-on-one) with each of the key units, so I came up with this new system for about half a year already. So every 6 weeks, I will sit down with the key leads from the CX team - PAR1 represents analytics, [xxx] represents external research, [xxx] represents service transformation, and [xxx] represents design - he's an architect and he has all those skills. Instead of having bilateral, I make the 4 heads meet together with me, because CX is so intertwined with the consumer business. I felt that if I did the bilateral, the others may not get to hear the same message or they may misinterpret. So it's better to have alignment.

Eric   So you've played the role of integrator for them?

PAR12   Integrator into the consumer business. Because they report into [ORG1 Chief Operations & Technology Officer], they have their own rhythm - weekly/monthly meetings. So that's not for me to say. That's for them to operationalise to support the business. And they also need to support Business Banking, Great Eastern, other parts of the bank. So to answer your question, yes, selfishly from a consumer bank's perspective, I play that role to have that bridge between the consumer bank and the CX team. So this forum allows us to surface up issues - in the event that my people have problems, or they hear things from their down-lines, because the working-level has a problem, or no alignment or what not, then this provides us a formal forum to thresh things out and move forward.

Eric   Very interesting. I'm now going to share with you a construct about the analytical process, and then we will have this discussion as to how ambiguity or equivocality (having multiple and conflicting interpretations) enter into the stream of this analytical process.

Eric	Eric then begins to explain to PAR12 about the construct of translating business problem --> data problem --> data solution --> business solution.
Eric	At the very beginning, to translate a business problem into a data problem, are you seeing a lot of challenges in the way people are interpreting the problem or not even understanding what data to look at? Because you are not expressing the problem in data terms - when you say, look I have a value proposition for a credit card - the market is evolving this way, maybe we have to enhance our stable of products. You know there's an opportunity, you know there's some kind of problem with missing out opportunities or misalignment, but it's not necessarily phrased in data terms. If you give this to an analytics person who has to then figure out what really is the business problem - is it a symptom or a problem - and them how do I match the right kind of data that can express what you are saying. Then they can start the analytical work. Do you see a lot of challenges in that area?
PAR12	Don't seem so.
Eric	Do the analytics people understand you very well? If you tell them you have a value proposition gap in the product, in your experience, they know exactly what kind of data to look at and how to kick off the analysis?
PAR12	It would seem so. In my experience here, I don't seem to have a lot of those kinds of [misinterpretation] problems. And I would attribute it to the skillsets and the way the analytics team is organised to support us. They have this relationship manager (RM) concept. So in the past, we never really had that. When I first joined the bank, it was not yet formalised. Now with this set-up, you can clearly see that the RM ... but they are not pure RM, they are practitioners ...
Eric	They also do the analysis, they also do the work?
PAR12	Yes. How much or how deep, I don't quite know. But they are clearly not hands-off. I give you an example: PAR3 himself is an RM.
Eric	You treat PAR3 as an RM? [PAR3 is the analytics lead for Unsecured Lending.]
PAR12	Yes. RM as in he is the interface with management. Because there are only those few faces that will always interface with our leadership. There's PAR1, PAR3, . These are the few that will always interface with business. So it's not just about me and managing up. Even at the leadership level, it's these few. So at the strategic level, where we are translating a business problem into a data problem, it will involve these folks, and they are very good. All 3 of them, in my view, are strong technically, but are able to connect with business. They know business, and business trust them. Like I shared earlier, we give them full visibility, we treat them as one of us.
Eric	If they were not part of your management team, do you think this would be a problem [translating business problem to data problem]?

PAR12	I think it will open up the opportunity for more mis-connections - you think you know but actually it's not quite there and those kinds of problems.
Eric	If you had to rank from 1 to 5, 5 being the best, having a seat at the table, or having an active participation in your review process, your business strategy development process, on a scale of 1 to 5, how important is it to resolve this business to data problem?
PAR12	I would say 5.
Eric	If you remove that, will this break?
PAR12	It may not necessarily break, but it would definitely not be optimal. And to me, I find that it's controllable. It's a man-made thing - structure-wise, whether you want to include or you don't want to include. By including, it's controllable, it doesn't cost us anything.
Eric	Initially the cost may be that you feel that they know too much, and that you may not necessarily want them to?
PAR12	Yes, but you just have to break the barriers. Make sure that people are trusting each other, that we are working as one and stop the politics and all that. As I said, our organisation did that some time ago. Culturally, we are just so accepting of the analytics team.
Eric	For the participation and having a seat at the table, I'm assuming it has to be done face-to-face? Or is that not necessary? How important is face-to-face?
PAR12	Err …
Eric	OK, today ORG1 is a Singapore-based bank. But if it wasn't; if it was a Malaysia-based bank with head office in Malaysia. Or it's in Thailand. And PAR1 lives in Thailand. And he has to dial in, and he's not face-to-face for your meetings. Does that change things?
PAR12	It's still possible with video calls. But it will be a tad not so effective.
Eric	You feel it would compromise the transmission of information?
PAR12	A bit. But here, because we have the luxury of having them all face-to-face, I see PAR1 in so many different meetings in a month. Just formal meetings alone.
Eric	What if PAR1 was not in this building, even though he's in Singapore? Or if his team was not in this building and they were based let's say in Changi Business Park, would that change things also?
PAR12	I would say slightly. My bias would be yes, slightly.
Eric	As a business person, your comfort level is to able to grab the guy, sit down with him and have a dialogue as opposed to exchanging emails or having a call. You feel that things would be lost … a bit. There's a sense that the

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transmission of knowledge or domain, or the context gets muddied if it's not face-to-face?

PAR12   Yes.

Eric   But by and large, because things are already in place, this translation of business problem to data problem is not an issue.

PAR12   Yes.

Eric   Whatever the mechanism that PAR1 employs, but you as a business person receiving the outcome - when they are translating the data problem to a data solution - they may say I build you a segmentation or I'll build you a score - do you see that there is a gap or a challenge? Because you may have certain expectations when you articulated the business problem, and even if they understood the data, but they didn't give you the solution you were hoping for?

PAR12   Almost never.

Eric   Really?

PAR12   It's quite rare. It's quite rare even as I've been here for 6.5 years, I've not had a single experience of going back and say, the solution is all wrong, your analysis is wrong …

Eric   I'm not saying it's irrelevant, but perhaps it's incomplete?

PAR12   Incomplete is possible. Maybe it needs some fine-tuning, but I would say the solutions are 90% of the time on mark.

Eric   Let's say you have a customer churn problem. It's a standard kind of problem. In reality, the churn is not the problem but rather, it's a symptom of many different things that may be leading to it. When you articulate that, the analytics team may say that they'll look into these issues and root cause analysis. But eventually they come back to you, they may build a segmentation or predict attrition or predict value or whatever it is. In those kinds of solutions, is it already shared upfront, that when you tell them that you've got a customer churn problem, I would like you to be able to predict it? Or you say, solve the problem for me in whichever way is best. And they may come back and say all you need is a policy change. Or what you need is a rule-based or a segmentation approach. Or to change your CRM approach. Rather than building a prediction scorecard.

PAR12   The way we operate, the business will articulate what the issues are, and what we hope to see as an outcome.

Eric   So there is an expression of what you think the solution should look like?

PAR12   Yes. But we won't hold the analytics team to that. They should do whatever they need to, and when they come back, we take what they propose seriously. That's the culture. We take whatever they come back with very seriously. So if they come back and say we need a policy change as in your

example, we will listen to them. We give them every license to criticise. It's a very safe environment; we trust each other, and there's not politics that says that they can't go into certain areas or make they can only make certain types of recommendations.

Eric   You don't steer them towards a solution that you would like?

PAR12   No. So when we articulate the expected outcome, it's what we want to solve for the problem - e.g. better customer outcomes, better financial outcomes, that kind of stuff. And then we leave them to do what they need to do. And they are very professional. When they come back, most of the time, the solution is quite spot on. But with a necessity to maybe fine-tune a bit for implementation. Because ultimately, there are operational nuances to execute.

Eric   This is the data solution to business solution part. You can do the model, but it's not practical to implement.

PAR12   But most of the time, it's quite there. It just needs a bit of brushing to connect to real-life in terms of implementation. Rarely would it be like they built something that we don't know how to implement. I almost never have that.

Eric   Maybe it's not a fair question since you are on the business side. But how do you think PAR1 and his team are able to make sure that their data solution is almost business solution ready? That means they've already thought about how it would be operationalised and how it would translate well into business implementation. How do you think PAR1 and his team have been able to develop this ability? Is it because of interaction with the business or through trial-and-error over time - getting things wrong and realising that you can only implement these kinds of solutions because that's the business constraints?

PAR12   I would probably attribute it to both. And I would say that the team that interfaces with the business, these same faces have been at it for years. PAR1 himself has been here for 10 over years. Kasper is also 10 years, and PAR3 has been here for a number of years already.

Eric   PAR3 had joined after you had joined?

PAR12   So it's been about 4-5 years for him [PAR3]. He joined slightly after me. But PAR1 is from day one - AJ [Anthony Johnson] time. Kasper also almost from that time, just slightly after PAR1. So for them in understanding business, vintage matters.

Eric   Because they already what the business constraints are, for lack of a better word.

PAR12   And I have no visibility on this part, but I can imagine there are tons of back-and-forth internally within his team before PAR1 presents the solution back to us. But his technical people will do the slicing and dicing, and PAR1, PAR3 or Kasper would have given inputs and reworked it sufficiently, giving them advise on implementation practicalities. So I will attribute it to their vintage, expertise and competencies over the years they've worked with

business. And they would play that role to mentor and guide, and push that down within his analytics organisation structure. I would imagine that to be the case. I'm not saying this over-sell the analytics capabilities here, but really, the quality is quite good. There's very little argument on whether the solution can be implemented or not.

Eric   PAR1 currently has an offshore analytics team in Chengdu, China. And I believe there are plans to scale it up to support more analytics work. What are your experiences or exposure with the Chengdu team? Or do your never see them?

PAR12   It's opaque to business.

Eric   You don't care?

PAR12   Yes. It's quite opaque to us.

Eric   If you had to scale and double the size of the analytics support to your consumer business, would your care if PAR1 builds it out from an offshore centre or build that increase capability in-country? What if PAR1 says you'll only have PAR3 who will continue to face-off with you and your business, but the rest of the analytics team will now be in Chengdu? Would that be a concern for you?

PAR12   I'm a business man. So my concern is cost. I would support scaling up at a reasonable cost. Because we are the pay-master. So I'm probably paying 90% of PAR1's entire unit, because 90% of their work is dedicated to consumer bank. Over time, that mix should change as they provide more support to the other parts of the bank like Great Eastern and SME banking. The reliance on consumer banking should come down to possibly even 60%. But today, the reality is that the bulk of their work is still consumer-bank centric, because they were part of the consumer bank before.

Eric   Chengdu happened over the last 4-5 years?

PAR12   Yes, that's right.

Eric   And did your experience any deterioration, benefits or dis-benefits in the quality of the analytics work?

PAR12   To be honest, it's totally opaque to the business.

Eric   You didn't see any change to the business?

PAR12   No, there was no change. In fact, we can say that it's definitely more than humming along. It's on the right track. I bet you that many of my down-lines are not even aware that we have a small team in Chengdu; it's oblivious to them. Because the interface is all still with the in-country team.

Eric   Today you have 80% in-country. But if it was reversed to 20% in-country, with 80% in Chengdu, and I told you that the cost of analytics to you can be reduced by 50%, would you want to pursue it?

PAR12   Meaning having more in Chengdu? And keep only a few people here in Singapore as our RM?

Eric   Yes. It will be cheaper for sure.

PAR12   Yes, it will be cheaper. But I guess that is not a call we can make, even though we fund the cost of the unit. The most important feedback and consideration must come from PAR1 and his one-downs, because they will probably be the ones left behind here to interface. It's for them to figure how they would operationalise the back-and-forth interface in such a set-up and whether it's efficient for them. Because today they are mostly in-country, we don't see the impact and difference. Things are well and there are no problems.

Eric   This is hypothetical. ORG1 is a Singapore-based bank. ORG1 also exist in Malaysia. And you have a consumer banking head counter-part in Malaysia. And he has to interface with PAR1 here in Singapore. Do your non-Singapore counter-parts find challenges in using the analytics capabilities and services here in Singapore, because for them, it's an offshore capability?

PAR12   I think there's less of a problem there because they are at a different stage in their business maturity. They are working hard - Malaysia, Indonesia - China probably not as much - to get analytics into their DNA. It's not that the people are resisting or not wanting to embrace analytics, but the fervour and the passion is not as strong. Because we started here in Singapore first, 6 years ago with embedding it in the strategy and so on. We used Singapore as the lead market to get that off the ground. So my counter-part in Malaysia – [xxx] has just moved there for over a year - he's working with his down-line structure to embrace analytics even more.

Eric   But is there a local analytics team in his structure?

PAR12   If I'm not mistaken, PAR1 may have 1-2 people there in Malaysia. If I remember correctly. Definitely not the heavy-lifting team that does all the analytics - that's here in Singapore and in China [Chengdu].

Eric   And do you then feel that it's not getting into the DNA fast enough because there is no local team there? Maybe it's a catch-22 situation?

PAR12   Maybe if you have the set-up and all the people in-country [Malaysia] and assuming all the stars are aligned, and the personalities work, and the trust is there, then in that environment it should be doing much better. In my opinion. Because I'm trying to imagine us here 6-10 years ago, if we never had that capability in-country, and it was all offshored and we can't do face-to-face, then probably our journey to get it into our DNA would have probably taken longer.

Eric   So one last question. PAR1 and his team are very closed embedded with your business. Are there domains or categories of work that you would not assign to your analytics team. Is there a line where you would draw and say, "No, only my guys would do these kinds of work."? Perhaps a 5-year strategy plan or something else where you don't see analytics playing a role there. Although one can argue that analytics can be used for everything. So

in your mind, do you have a separation where you say, "Your work stops here" for the analytics team?

PAR12   Maybe not a hard line. But I would like to at some point. This is the classical debate - analytics vs MIS [reporting]. We can't run away from this problem today - there is still that element of MIS.

Eric   And MIS sits with you?

PAR12   No, it sits with PAR1. And the discussion is around constraints in the organisation. So the business people can't have access to certain information or data; some of this data resides in IT. And to get IT to do certain things is like pulling teeth, where it will cost a lot of money and resource and such. But these information or data may also be available in the [analytics] datawarehouse. So it's faster for PAR1's team to just pull it rather than going to IT. So the discussion with PAR1 is that while we recognise that he is pure analytics, but because of this business need, can we fund 1-2 headcount to support on the MIS. We don't need them to be high-powered rocket scientists, we just a low-level data extractor.

Eric   The way PAR1 would argue is that this is scope creep, and if he lets it in, then it never goes away.

PAR12   Yes! So this is the reality today. Depending on certain time, situation or urgent need, even if it doesn't come from me, it will come from the top, beyond my pay grade. They [analytics team] will be strong-armed into it and they will still have to do it. And we end up using very expensive resource for that kind of work. I don't see that problem going away. So we must have an agreement. And that's the part where I'm prepared to draw the hard line. Only when the business people have quick access to simplified data and the culture of using it on a self-help basis is strong, then I will draw the hard line to say that PAR1 should not touch MIS. There may still be a little bit of it even then, because there will be some self-help MIS work that my people can't do. So we may still need that 1 headcount and we agree to the scope and no more. And then I'll draw the hard line for the rest - for these kinds of scenarios, I will tell my people not to waste PAR1's time. Because we've already deployed Qlikview, it's all at their fingertips - broad things. We are already working with the analytics team and agree on these 10's and 10's of reports to be available in Qlikview. So we've started that journey and it beginning to take root already. Because there are some champions here. In the business, I'm happy to see there are some champions who are so driven - they will really self-help before they talk to PAR1. And they are role models - they can showcase that they know their business, their numbers. I know this because I talked to them. There are not many of such, there are a few. A few gems that I have who are now embracing self-help analytics. I now need to imagine the end-state where everyone, my product guys, my segment guys, my marketing guys, are in that mode. Then a lot of these MIS won't need to be done by PAR1's team anymore. Then the analytics team can focus on the higher-value analytics work. I'm slowly getting there, but I'm not ready to draw the hard line today. But I would like to draw that hard line.

Eric   But you wouldn't say that if you are building a 5-year strategy plan, that the analytics team need not be involved?

PAR12 No.

Eric For you, everything within your business, you would want the analytics team to have an involvement. At least to be there to be aware …

PAR12 Minimally to be aware. But for all the strategic things, they are there. They are part of it. Their voice at the table is no different from Finance; Finance has control over the purse strings. Finance is there, Analytics is there, together with the business. Culturally, it's like that. It's not just me or my team. Credit to the bank, it's even before my time, they've already achieved this culture. But it got intensified even more in the last 6 years, especially under Wei Hong's sponsorship because he is a big, big believer.

Eric Eric thanked PAR12 for this time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections.

Person	**Transcription**
Eric	Eric thanked PAR13 and explained the BI&A organisation design research.
Eric	To start, can you give a brief history of your work experiences, and particularly, your experiences with analytics.
PAR13	Your PhD topic is very interesting; there are a lot of things that I'm struggling with today. I would divide my work history into 4 career stages - (1) I started almost 20 years ago in 1997, graduated from George Town University and started as a risk analyst in a small bank called the People's Bank of Connecticut. Came in pretty much at the entry level. When I went for the management associate interview, I remember one of the questions posed by a senior manager. He said, "What is it that you want to do?" And I said, "I want to be an analyst." He said, "We're not going to put you in this management associated program where you can do rotations. You know what you want to do." So they put me into an analyst job. I started off in Risk Management. Very basic, and one of the best thing I got was the exposure to a lot of programming skills. SAS primarily, but also learning how to pull data from the datawarehouse, using Excel VBA to make things more efficient. My primary focus was first on Collections dialler and collection strategies, and eventually managing TRIAD [Collections system]. After 3 years there, I came over to ORG3 in their Risk Authorisation team. At the same time, I was starting my MBA. It was the probably the most unpleasant career experience at that time. Mostly to do with the manager. After 18 months, I was given the option to 'post out' and I heard about Decision Management [ORG3] and I met Alyssa Young and a few others, and they mentioned that they were building a strategic business units (SBU) looking at different segments of the credit card market. I was the first person to the College SBU. I had complete creative freedom in there. They empowered me to solve problems. One of my most positive experience was doing a credit line analysis. Having been a college student not too long ago and I felt I could relate; my 2nd credit card was a ORG3 card. And one reason I found myself not active on the ORG3 card was that the line was too low. So I argued that we should give everybody a $2000 line otherwise we would be leaving money on the table. So I proposed doubling the line. But Risk policy was preventing it. We were getting into a space where we don't know what would happen if we doubled the line. You have a hypothesis, you have some interesting data showing better spending behaviour for those with higher credit lines, but you couldn't prove that it was causal. So we tested it, rather than arguing about it. We created a champion/challenger strategy, we have a no-mail control group, and we got approval to do the test. I ensured proper execution and so I got good tracking data. I showed performance of sales and EBIT [earnings before income tax] of the last 6 months of test vs control and you see the incredible lift after the credit line doubling event occurred. Sales goes up, revenue goes up, and the best part was that NCL [net credit loss] was flat! There was no incremental NCL. Everyone was

boggled. They believed that if you double the line you should get twice the NCL.

Eric   But you were not in Risk at that time?

PAR13   I had left Risk already, and that was when I had a complete distaste for Risk.

PAR13   So that experience excited me. I wanted to find more problems like this. We did 'Get and Spend' program - I thought it was a dumb idea thinking that people would game us. But based on the testing, I learned that I was wrong and that the program worked to re-activate accounts. So how do you create this culture of accepting ambiguity and be open to other people's ideas and go test and learn. So test as fast as you can, so that if you are going to fail, you fail fast. And if you win, you build on it. So after a few in this unit, I got involved in the opportunity to spread Decision Management around the world. So I did trips to UK ...

Eric   How old was Decision Management at that point?

PAR13   This was in 2004. One of the purpose of me joining ORG3 was that I wanted to get international exposure. I love to travel and I wanted to see the world. That was my attraction to ORG3. So I told [xxx] that I wanted to be exposed to the world. She gave me good career advice, "You should always raise your hand. Let your manager know what it is you're doing." And so she picked me for the UK thing. When they wanted someone to go to Bangalore and help them on the ground there, she asked me first. And I would say 'yes'. So I went to Bangalore and spent 1 year there (in 2006/2007). They were getting up to speed at that time, they were working on silo-ed projects. We were doing so much P&L pro forma work (PPR for acquisitions) in the US, and it was repetitive and not really generating much incremental value, and hence the decision was taken to do the work out of Bangalore which was cheaper. So I was asked to help make it work since I had the experience in doing the pro forma. I was to go over to Bangalore to train them and creating the communication linkage. There has to be a lot of communication; they have to know people on the other side and they need to be able to talk to them. What struck me about the Bangalore team was that they were very young. They just came out of school. So we are passing stuff that's being done by experienced people to them. It takes time and it's not going to be right the first time. They're new and completely green. They've never done this before. They are trying to learn. And it becomes a challenge when you are trying to do this remotely. Because not all the discussions happen during the meetings - there's the 'elevator conversation' that happens offline, and the remote team misses out on that. So when I was in Bangalore, I was put in charge of all the ECM [existing customer management] programs.

PAR13   So after 9 years in Cards, this was at the height of the Mortgage crisis, I got bored because I felt like I did everything, plus I was living in Connecticut and it was a long commute. And so I joined the Mortgage team. This was 2009, and we were in shits. We were looking at how to use analytics to solve the Mortgage problem, preventing foreclosures and stuff like that.

Eric   And you've never done Mortgage before?

PAR13   No, never did Mortgage before. But the principles were the same. How do you determine who you would target, you set up your testing and stuff like that? Again, we were experimenting. The Obama government was coming up with their Home Approval Modification Program which was a complete disaster. It was so bureaucratic. But we came up with a test - let's try something new. What if we just drop our interest rate on a whole bunch of people - find your high-risk customers, drop your interest rates, no modifications, no documents, just drop it. What will it do? Guess what, it lowered delinquencies and it actually increased revenue, and it was more profitable. I had the test/control. Government didn't like it because it wasn't documented. But it worked! It was helping people to stay in their homes, and it was helping the banks be liquid. So we ended doing a slight modification - we would mail them a form which they just have to sign. That's all! No income document, nothing required. The principle was simplicity. Make it very simple for these people. Again, we had higher interest revenues, lower NCL, positive EBIT. We had an incentive-to-pay program. We went to a bunch of customers and said to them that if they stayed current on their payments for the next 6 months, we would pay one mortgage payment on their behalf. We tested it - at first it didn't look like it was working, but then after we started paying out some of the initial payments, boom! we had a 5% improvement. Now, the financials were a little bit tough because there were 50% of people who would be current anyway and so you had this mis-classification. So we added the power of analytics, something called the increment model or lift model, and we were able to improve the targeting to make the program profitable. And then were doing refinancing using analytics.

PAR13   After 4-5 years in Mortgage, in 2013, I decided to start leading Decision Management teams. So I went and lead a team in Japan. The team wasn't really doing analytics, they were doing a lot of MIS. It took a lot of time for me to get the team to be thinkers and to deal with ambiguity, to ask questions, think about how I'm making money, and to get them to experiment. So we started doing various types of testing. But right when it was starting to get good, we sold the business. And so I moved to Singapore. But again, my experience in the last year, things have changed a lot since your left, I was kind of reliving the Japan experience. We weren't really using analytics. One year later, I've rebuilt the entire team - I've got a whole new set of people and I'm optimistic that we will be able to get things in shape.

Eric   Just for the record, how old are your now, PAR13?

PAR13   I'm 41.

Eric   And so your first role was in analytics and so you've been working for 17 or 18 years?

PAR13   19 years. And most of it in Decision Management.

Eric   I'm going to now ask you some questions around the definition of analytics. The reason for that is that different people interpret analytics differently. An IT guys would see analytics as datawarehouse. In this research, I'm using a catch-all term called Business Intelligence & Analytics (BI&A). I'm fine that

it can mean different things to different people as the spectrum of analytics is quite wide. Maybe you could describe what BI&A mean to you?

PAR13   I was once told, what makes a good analyst is the questions they ask, not the answers that they give. They instructed me to be inquisitive. I always tell me analysts - ask a lot of questions, tell me about your problems, and let me figure out how to get the answers that you are looking for, and then how to use analytics to provide a solution. It's about getting insights and driving solutions.

Eric   The insights don't always lead to a solution?

PAR13   Yes, the insights tell you what is happening. It may not tell all that is happening. [xxx] [former Global Decision Management head] always says analytics is art and science. It's kind of like painting by numbers but they didn't give your all the numbers. So there are a lot of blank spots in there and "what do I think is happening?" And [xxx] says, "you're paid to think." It's not going to be black and white, it's going to be a whole bunch of missing stuff. You need to think what is happening out there and then think what you should do about it. I have business managers who ask me, "does it tell me what to do?" Sometimes, "no". But it may help you to lead to particular actions, or I can fine-tune my understanding of the problem that's out there. One of the things that drove my interest in Singapore and its current set-up: Decision Management is now part of Customer Franchise which consist of Digital Banking, Customer Experience, Marketing Research. The idea was how can I be customer-centric? How can I get this other set of data that may come from marketing research or the agencies? How do I use that data to improve the 'picture' on my internal database? We haven't figured it out yet; we're still trying.

PAR13   One of the things I'm trying to figure out now is loans. Singapore prices are way too high. But it's market practice. But me as the consumer, I'm thinking this is not good; it's not healthy, it's not a way to build wealth. And I'm trying to convince the business to lower its pricing to make our revenue numbers but making more volumes. Plus you're helping the consumers. It would be very easy to steal share in the market, but you have to move fast. Once of the things I was trying to point out was the ORG1 Singsaver account - they just dropped their [loans] rate to 8.33% while ORG3 is at 9% in EIR [effective interest rate]. ORG3 was paying money to advertise, but customers are seeing 8.33% from ORG1. I finally got the data from the Digital guys and they reveal that ORG1's click-throughs have doubled while ours have remained flat. Yes, the market is sensitive, which is what I've been telling the business for a while. So it was helpful that I got these other sets of data from these other units that strengthens my case.

Eric   It's a very nice segue to my next question. It sounds like there is a significant amount of ambiguity to problem solving - meaning that even after looking at the data, you may not fully understand what you are solving for, or what is the nature of the problem. On a scale of 1 to 5, 1 being the least and 5 being the most, how much ambiguity do your generally see in the analytics work that your do? And I'm excluding the MIS reporting piece from this.

PAR13   My first reaction is that it depends on who is asking the question. One of the challenges that I've observed that is different from U.S. - I get asked a lot of basic questions. In some ways, the product managers are doing the job of an analyst themselves, and so they ask for data in specific format and cuts. It's therefore not very ambiguous. "I did a merchant promotion. Show me the sales pre vs post." It's not ambiguous, and in some sense, it's pretty much like MIS. But the questions we should be dealing with should be more ambiguous.

Eric   So let's say the product manager has the data on pre-post sales. Maybe the post-performance was better. Maybe it was worst. Do they ask, "what should I do to fix it? Was I wrong in the campaign design? Or was it perhaps an economic situation that influenced the outcome? Or is this an anomaly? Or is it just poor timing?"

PAR13   They are not asking those questions. It's not evolving to that next level. So part of my frustration is that we are very busy but it doesn't mean we are very productive. I try to influence the questions, but it depends on the partner that you have on the other side. Are they ready for that level of analytics? Coming back to this pricing thing, I'm trying to make electronic emails a more viable channel; our results have been flat to control. I'm looking for proactive thinking on our business partner's side to ask, "why is that?" I'm trying to lead them to realise that the price is too high. I think I know what the answer is. I'm trying to show them. It's a lot about persuasion and I still haven't succeeded. Which gets us to this whole part of 'influencing' which is not necessarily my core strength. I'm more of 'do it or don't do it' guy. I'm trying to do all the things I was taught - build allies, show 'what's in it for them'. You've got to deal with all the different personalities, saying, "no, this doesn't work." So there's a lot of resistance, and all I'm saying is, "look, you don't have to believe me. Test it." That's all I want to do. We do a price test; we test a couple of different rates; we don't give it to everyone; we do it completely below the line. Test it. My favourite quote from Prime Minister Lee was, "The best time to plant a tree is 20 years ago. The 2nd best time is now." Same things with analytics - it's testing. We've got to have data now. If we don't, then just start doing it so that we can get this set of learnings. And that's what I'm seeing happening in the digital space. They know it's about test and learn. And do it quickly. And so now with the website, they are doing this rapid testing. And if you can get that velocity of running, you're going to be leaders of innovation, and you'll be able to move the market. So, in terms of the organisation, how do you get your business managers to be willing enough to be constantly testing and to get that learning.

Eric   I do agree that testing is needed, and is it the only means of getting better? Let me explain. When I started this conversation, we talked about the nature of problems being uncertain and being equivocal / ambiguous. Generally in the experimentation / testing space, you are trying to solve for uncertain problems. That means you've got a hypothesis but your need data to validate it. And what testing does is to collect data, and hopefully in an unbiased way as possible. But testing doesn't necessarily reduce equivocality / ambiguity. For example, you believe it's 'price' but they don't, what other mechanisms would you have beyond just testing, because you don't have a convergence of understand of the domain issue.

PAR13   Let me see if I understand your question. You are saying, testing gets your more data points. And everyone's ideas are technically all valid. But you don't have the resource or ability to test every possible idea. So the question is whether you can leverage on more of your [past] experiments. Because many of the problems are the same ones. Like in terms of price sensitivity; we've been doing price sensitivity for many years. While we may have done it before, we don't have the discipline for it right now. So I tell them that I've done this in the U.S. - I led the analytics that introduce the balance transfer fee. We ended 0%-no-fee in 2007 based on the analytics that I drove. We did price testing. And it went from a $35 cap on fee to no cap. So there are experiences there. Me parachuting into Singapore where I don't have the relationship with the people. Some of them have been around for a very long time. And they will say that I'm an American and that I don't know the Singapore market. So it's how well I build my relationships, how do I create the confidence measures, so that it makes it easier for me to influence them. Sometimes I don't recognise that that is one of my flaws - it takes me a long time to build relationships. And most of my relationship are built while working on projects, and sometimes it's with tension. Other people may have an easier ability to build relationships. And that's one of the challenge. Many of the analyst are introverts. They prefer spending time in front of the computer and don't enjoy doing presentations. They like playing with the data, but they don't like making the PowerPoint slides, or how to tell a story. It's a stretch for the analysts, but as they get more experienced, it probably gets easier, and we help them along with guidance and training. So yes, U.S. market may be different from Asia market, but people like free stuff. People always prefer lower price. The question is how sensitive they are in their respective markets.

Eric   OK, you mentioned the point about 'painting by colours' and there are missing numbers. That to my mind, is about data interpretation. So even if you had the test, you won't have the ability to collect all aspects of the data to fully confirm causality. And so you imply certain causality. And that requires 'filling in the blanks' with some interpretation. And one may argue that across the different analysts, they may interpret it slightly differently. When you were in the U.S. for example, what organisational mechanisms allowed you to sharpen your interpretation or fill in those blanks. For example, with no disrespect, your started your entire career in analytics - what gives you the ability to interpret those blank spaces? Is it because of vintage in the role, is the way the organisation of analytics is designed where it's either embedded with the business or it's centralised or it's working through other forms of partnerships, and communication that allow one to fill in those blanks?

PAR13   I'm not necessarily more qualified, neither am I under-qualified to make that interpretation. But again, everyone may have a different interpretation, and I know that I may not be right in mine. So you have to be very open to ideas. But one of the things that I've always relied on heavily is that I'm also the consumer. I put on my 'consumer hat' and ask, "how am I going to react to this?" As an example, we are re-launching the Dividend Card. And I said, "this is great! I'm moving here and I need a new credit card. I love cash-back." So they develop a value proposition - "we need to shout 8%". Then I read the fine-print and realise that most of my spend would attract a cash

back of only 0.25%. So I pointed out to them that I wouldn't take the card because it's not 8% for me but 0.25%. They went ahead to launch the card and it's so-so; it didn't really move the needle. So I rely on that set of personal experiences in some instance. It's the same thing with the earlier example we were having on ORG1 - how would I react as a consumer. But I recognise that I'm a singular data point. So I try to keep an open mind to listen to what other people are saying. That's why I like to get in front of focus groups, I like to hear what the Citiphone people are saying, or looking for non-data type of insights to understand what's going on. I'm very big on personal finance and trying to come up with ways to developing a wealth strategy to help people get out of debt. And that's probably one of my controversial stance - I don't believe in giving people more debt.

Eric   When you moved to Bangalore, can you talk about the considerations of the type of work that they were prepared to offshore vs onshore? And when you were there, what were the sort of challenges in the ability of the offshore team to interpret or deal with ambiguity?

PAR13   We started off the work in acquisition pro forma. It was running an update of the curve, CPA, response rate every month. It was updating a model every month. I would describe the work as low value. It wasn't leading to any major decision changes. We were Decision Management and we were supposed to helping you make decisions on how you execute your business strategy. Many times, the business managers had already made a decision and were simply using the data to validate it. So were doing all these monthly updates through lots of Excel files and it was being done manually. So NY took the low value work and move it to Bangalore where it was cheaper. But the Bangalore guys were sharp and they realise that the work they were doing wasn't really changing anything; it was a repetitive job on a manufacturing line. So we [NY] had to challenge them on thinking by asking them to think about price, about what's happening in the market place, about what would happen if they changed certain price parameters - to encourage their curiosity. I don't think NY really achieved that. But in the last 2 years when I went back to Bangalore, after almost 10 years away, I found that they had evolved the low value work and made the model more sophisticated. They evolved the P&L model from a segment or product level to an account or customer level. They would predict what would be the best product to take, they would predict the sales, the cash flow, etc., and then running through an optimisation. I can't say exactly how they evolved to that stage as I wasn't there, but the ending point is where I wanted them to be. It didn't have to be Bangalore, but we as a company needed to get to that spot. I wanted them to do account level P&L when I left Cards in 2009. When I was doing re-financing in Mortgage, it was a little easier to do. We were able to build a lifetime P&L and it changed the way we did our retention strategy. We were forecasting on a daily basis and we were managing the leads based on the capacity the business had. So that was a big step to use analytics to try and be more customer-centric.

Eric   So with the evolution of what you've seen in Bangalore, evolving from a segment-level P&L to an account-level P&L, was it because they were centralised and having like-minded people place together? What they were doing was solving uncertain problems. They could figure out how to get more data to push the solution to the nth degree - getting the P&L at account

and customer level. But would the Bangalore team be able to handle a question like, "should I launch a Dividend card in Singapore?" Would you have given such a problem to Bangalore?

PAR13   It depends. In the U.S. model with Bangalore, the biggest pain-point was the time zone difference. They spin it as a benefit that the combined onshore/offshore team could be a 24-hour shop, but it was a challenge to the model. The time-sensitive work was kept onshore while the less time-sensitive work like building models was released to the offshore team. When I was running Japan, time zone was less of an issue. There, I could give them more of the time-sensitive stuff because there was enough overlap in the working hours and the Bangalore team could dial-in for meetings.

Eric   So the interaction model could be more collaborative as opposed to a hand-off?

PAR13   Yes. The U.S. interaction model was very much about 'passing the baton'.

Eric   So what you are saying that in the U.S. model with Bangalore, you would not give them the 'origins' of the problem …

PAR13   They [Bangalore] would be given a part of the problem. So in the Dividend card example, the U.S. analyst may say, "we are thinking about changing the value proposition. Here are some constructs that we are thinking about. Can you go and run the P&L for these ...? And it also depends on the level of relationship they have between them [U.S. vs Bangalore]. Initially, there would be a lot of hand-offs but over time, with constant interactions, and showing ability and gaining experience and confidence, the Bangalore analyst may be able to have influence over the discussion and share their thoughts on how they are thinking about the problems differently. With the Japan interaction, they were sometimes able to do that. Because there was less 'baton-passing'.

PAR13   So that got me thinking. if I were to open a CoE, could I do it in the inner cities of U.S.? I grew up in the inner cities. It would address the time zone problem. I would hire under-privilege kids and pay them the exact same cost as Bangalore. I teach them SAS or R, given them these types of problems ... I could take them through the whole experience and I believe as they gain experience, they could be a direct competition to Bangalore. The advantage of Bangalore is that they have the talent. Even in Singapore, I can't find people who have that talent.

Eric   But is the talent [in Bangalore] matched to the nature of the work? I keep asking myself that question. When Rajiv first started the ORG3 CoE in Bangalore, he hired from the top schools. But if they were receiving low value work, then do you really require that type of talent?

PAR13   Initially 'No'. But over time, as they 'pay their dues', it helps determine who the top analysts are. This is what happened to me: I was given all the low value work in my first job. First month, I watched the person do. 2nd month, I did the way the person did it. In the 3rd month, I automated the process by learning VBA and such. I spent my time and redesigned the process and reduced the time taken from 2 weeks to 1 hour. I showed it to my boss, "I'm

	done. What else is there for me to do?" And that is the natural selection process - who are the 'thinkers' (vs 'doers') who can solve things in a different way.
Eric	I hear your point. We give work based on the ROI of the cost - so if you have lower cost, I give you lower value work. But being onsite, you have the ability to morph your job to move up the value chain … because you are with the business. In the case of Bangalore, what is the opportunity of them moving up the value chain? There is a natural ceiling, isn't there? Today, I believe Bangalore doesn't have direct interface with the business. Rather, they interface through an onsite team in the country that is interacting with the business. The Bangalore analysts may join the call, but they will not be the primary interface with the business.
PAR13	Depends how you do it. I would let the Bangalore analysts interact directly with the business. That was my model. Because I was on the other side [when I was based in Bangalore]. Of course there are some folks whom I would not let them interact with the business simply because they are not ready or they don't have the personality or maturity. So I have no reservation to letting the Bangalore analysts interact with the business as long as they are adding value and they are ready. What we've seen in the last 10-15 years of the Bangalore CoE, the rising stars there are now leading Decision Management in countries or are now in the U.S.
Eric	But they had to leave Bangalore! Does that mean to rise up the value chain, and perhaps I'm putting words in your mouth, you are able to deal with more ambiguity and that you are able to get convergence and shape or frame / re-frame the problem, and that requires me to be closer and closer to the business? And so the rising stars of Bangalore leave the CoE to be embedded with the business?
PAR13	I don't think they necessarily have to leave, but you do have to be closer to the business in what you are doing. There were 4 different work sites for Mortgage in the U.S. But if you had a relationship with the business and you were interacting with them, you were able to influence them even though you are on the phone.
Eric	But I would argue that for Mortgage in the U.S., other than Bangalore, the other work sites had business people embedded there. And they were not just pure analytics centres only.
PAR13	My work site in Stamford was comprised of Risk and Decision Management. All the executive management was in NY. We had product managers in St Louise and Texas, and a lot of my interaction was with those folks on the phone. So it was our ability to influence the product managers. So could you do it from Bangalore? Well, I was in Bangalore and I did it. I was the link.
Eric	But you knew people in the U.S.
PAR13	Yes. I knew [xxx] [senior Decision Management executive]. So I could interface with her. I was able to influence from Bangalore, but it was because I had the stronger relationship.

Eric	But if it wasn't you? Would have anything originated from the Bangalore team without you? Because you brought your relationships to Bangalore.
PAR13	Yes, I brought those relationships. But there was an analyst in Bangalore who was very good at building relationships and she was able to influence the work on pricing. So I think there are examples that it can be done, but it's when they are ready. For me the problem is not about a different location, but rather, it's the level of maturity of the talent. When we first started with Bangalore, they were very 'green'. All of our entry-level hiring happens in Bangalore. Which is my concern. If I had to go and get my first job at People's Bank, I would not get a job today. Because all those jobs are in Bangalore. But even in Singapore, I hesitate to get entry-level local talent but I probably have to as I can't be sponsoring too many employment passes.
Eric	But you dry out your own talent pipeline.
PAR13	Yes, but I'm looking for that middle ground. I lost my pipeline when we migrated the MIS [reporting] to Bangalore. That was my talent pipeline. So … we should be hiring in Bangalore because there is a good pool of talent but we also need to diversify. I should be looking for the best in all places. And how do I have nice mixed portfolio of talent rather than having everything in one place. And I think that's a big risk.
Eric	You've seen both the evolution. If you were to take a fresh [entry-level] person in Singapore or in the U.S. vs someone in Bangalore or India, tend even though the talent may be higher in India, the time it takes for them to mature into talented analysts who can have dialogues with the business, deconstruct problems and all of that, is it faster if they were onsite, or if they were in the CoE with like-minded intelligent people but perhaps with less direct contact with the business? In some sense, I'm asking the question of how important is being close to the business to your growth and development as an analyst?
PAR13	If the analyst has potential, be less of an introvert and is able to engage in dialogue, then it's much easier for the person to develop if they have person-to-person contact. But if the person is going to be an introvert and behind a computer, it probably doesn't matter. You are not going to move away from your computer and talk to anyone even if you are onsite. But if you can get up there and use the whiteboard and articulate your solution, then you would benefit from being onsite. If I were to bring an offsite analyst onsite for rotation, I could probably keep the dynamics of the relationship going virtually after they go back. And we've done that before, and they were still able to influence when they were back offsite. But you have to be that person who wants to talk to people, because a lot of our folks don't want to.

Interview continued on Jun 4, 2016

| Eric | I would like to pick up from where we left off. I would like to explore this notion of 'having a seat at the table'. We always talk about it. It's more than just a part of the management team, attending meetings and such. A seat at the table could also mean having accountability, having decision rights. For Decision Management in ORG3, I would argue that we do have seat at the |

table. A number of things, from a decision rights perspective, sits with Decision Management. Having now seen different countries with variations of decision rights, can you share a little on how having or not having a seat at the table, affects the ability to get convergence, or the ability to reduce ambiguity in problem solving?

PAR13   From what we talked about the last time, the key is relationship. A seat at the table is a recognition that you have at least achieved a positive quality in the relationship with the business partner, where they need your counsel. And the ability to then influence becomes a lot easier. I've been in Singapore now for a year, and when I came, I didn't have any relationships. It took me a year to build relationships; and based on my personality, building relationships is a challenge for me. I tend to be more introverted and I have to force myself to interact. And many times, my style of building relationships is through working on projects together. Others may go have a cup of coffee or they do lunch as a way to nature relationships. Over the last year, I found that the Cards head was more open to working together and he gave me a seat at his table. I'm part of his weekly management meeting and so I hear he says to his team. And I can have his ear on what's going on. Initially I had my way of thinking, and they had their way of thinking, and we were not communicating as well; we had different perspectives. Sometimes we're saying the same things, but it doesn't sound like it. Although he's an American like me, we don't always interpret things in the same way. But I'm now having this 'mind-meld' with him where we understand each other's perspectives, and we converge on the same thinking around opportunities. But my relationship with the Cards sales head started out more adversarial - he would say 'No' to everything I said. And I'm trying to figure things out as I never had to deal with a human sales force; in the US it was mostly direct mail. So I had to understand the people element, and I got to learned that from the Cards sales head. Especially the importance of getting the incentive plan right if you wanted them to sell. From adversarial to where we are now pretty much joined at the hips with cross-sell which I thought was the most important thing for Singapore to focus on. I was able to make the relationship stronger by working on a common goal.

PAR13   The Cards sales head was challenged by the Consumer Bank Head to improve the cross-sell on inbound; he was given this charge to get it done quickly. His mission was aligned to something I thought I had to do. So I diverted my resource to make it easier for him to accomplish his goals. I found an opportunity to improve the project management discipline by bringing everyone together to keep track and take stock. So when the Cards sales head was away on vacation for 2 weeks, I decided to convene a cross-sell council on my own authority. I did not ask for permission, just forgiveness. So every Thursday at 11am, right after the Senior Management Group meeting, I run my cross-sell council, which I deemed as the 2nd most important meeting for the bank. And I chair it with the Cards sales head. So the relationship got stronger as I was helping him achieve his goal, and helped him with a process that he probably didn't realise he needed. He probably started it, but I kept it going. And then the other Senior Management Group folks started coming for the meeting as well. They heard that decisions were being made. So that's how my relationship with the Cards sales head evolved. So, in effect, I created my own 'table' and offered 'seats' around it.

PAR13   On the Retail Bank side, like Mortgage, we don't yet have a seat at the table. I tried to create a weekly meeting session but it's been wobbly. Maybe it's because the Cards side has been getting better traction and I therefore end up giving them more focus and resources. Although I think cross-sell is as important for the Retail Bank as well.

Eric   The Cross-sell Council doesn't involve the Retail Bank?

PAR13   No, it involves everyone. If you want something on the cross-sell palette, you've got to show up here. Take the Retail Mortgage team for example. They didn't show up consistently for the cross-sell council meeting and we 'voted them off the island'. And I told their senior manager that unless they start showing up, they won't get a place in the cross-sell offer palette. I told them that we created an optimisation framework and have identified 3000 leads for them, but they're not getting it unless they show up. So that's my next step: to build up this relationship with the Retail Bank. I don't understand Relationship Banking. That's part of my problem - why do we need a relationship manager?

Eric   You won't use your relationship manager?

PAR13   In U.S. and in Japan, I achieved Citigold [priority banking status], I got the ATM card but it's been no different from the previous relationships. So to me, I just don't get it. There was no sense of 'arrival'. So I was thinking, "Do we cross-sell Citigold, or do we just cross-sell investment products, or a brokerage account?" So my relationship is evolving there, and there's very little analytics in play. So should the senior manager 'embrace' me because of the potential I can bring to drive their P&L. On the Cards side, historically, analytics drives their business and so they make sure their analytics team has a seat at the table. So it's somewhat by default. For the Cards sales head, I had to convince him that analytics adds value, and when I did, he embraced it. So I try to show how I make their Retail Banking business better to earn their trust.

Eric   There is a formal seat at the tables versus an informal seat at the table. What you've done is through a bottoms-up process, insert yourself into the daily lives of some of these product managers and the lines of business. Having that relationship increases the capacity to access the background and context to a business situation because there's a lot more information being shared across. But there's also the formal decision rights process. For example, if you take Risk or Finance where they have to give approval, it drives the business to explain to them their position; it forces the need to converge on interpretations and ideas. Similarly in Decision Management, you have the decision rights where no campaign can execute if you don't approve the list to be extracted. Because the list extraction sits with you, and one can argue that you have to give approval for the campaign. And if you don't agree to how you interpret the problem, or converge on the campaign solution ...

PAR13   I have a slightly different point of view. Do I need to have formal approval? Do I want formal approval? Or do I just want to provide guidance? I always try to go with the view that my goals are the business goals. I need to help them achieve the number of account, the sales volume, etc. And I see what I

can do with the analytics to drive those numbers. One of the issues I have with the campaign approval process is that I don't want to reject the approval at the point when the list is already extracted or when the business submits the request for the list. Because it wastes all the efforts that went into the process. In the U.S., we tried to do this with the Mortgage team - we tried to move the approval process to the beginning where the campaign is being thought about and designed. We have a kick-off meeting with the product manager where they come to us and tell us the problem they need to solve for. In order to answer the question we will do some analysis, and then we'll come back with a proposal. We'll kick around the proposal (as we may have different points of view) and then we get to a consensus of what we want to do. Then by default everything else is approved - the campaign request form, etc. To me, if everyone had the opportunity to participate and opine at the beginning of the process, the it's just about execution and tracking results, and reporting back to the group. So I don't want to approve at the end-point of the campaign extraction process, because by that time, the business may have already made commitments to getting it done by a certain dateline. So I rather have my say at the beginning - we can debate, and sometimes I may lose the debate, or they may lose the debate, but we get to a point of agreement and move on.

PAR13   I lay out my cards - I only have so many people in my analytics team, I've got only so many hours in a day. So please rank order my list of priorities. I do the same thing with my campaigns. I have only that much of campaign hours, this is how long it takes to execute a campaign, these are your slots, I'll do whatever you want me to do, but you have finite resources and you have to impact the P&L. The business needs to prioritise. I can consult you and provide you advise on which campaigns are not performing and should not be run. So I've been pushing responsibility back to the businesses. We need to align. I'll give you counsel. But you have to be accountable for what you are asking.

Eric   For the U.S. Mortgage case that you mentioned earlier, you start off with the problem statement, you then ideate and figure out how to solve it, and then we converge on the solution, and everything is subsequently 'self' approved. There are actually 3 things happening within that whole process. One is what I call "translating the business problem to a data problem" - doing the analysis, understanding the context, doing the diagnostics. And then next, "translating a data problem into a data solution" where you may recommend a predictive model or a segmentation to solve the problem. Finally, the data solution has to translate into a business solution - "what offer are you going to make? When are you going to roll this out?" Just because you've got a segmentation doesn't mean you've got a business solution. And all those sequences of activities need to happen. So when you say you move the decision rights upfront, how do you know we've landed on the same page? How do you know you've translated the business problem into a data problem, how do you know you've converged on the right data solution, and how do you know your business solution is right [given the concern of 'pre-approval']? The campaign execution can be fundamentally different from what was discussed as the business problem. We can all agree on the problem, but the choice of execution, translating the data solution into a business solution, can be very, very different because of timing, because of the offer, etc. Should you not therefore have separate check-points, where

you still need to have decision rights downstream even though we've all agreed upfront?

PAR13   That's an excellent point. This is the mindset I'm dealing with my team now. A lot of times, they view their jobs in silo - I'm Analytics and I only do that. Campaign team only does the campaigns. The Tracking team only does the tracking. I'm telling the Analytics team that they need to see through the entire life-cycle of the project. I use the metaphor that your analytic projects are like your children. You own it end-to-end. Like any parents, you want to see how your kids grow up. You send them off to college, but at the time of transition, you still have to check. Same with the campaigns. When I first got here, each analyst was supposed to review and approve the campaign design request, and then they give it to me for signing. I asked them what their contribution was to the process and they didn't know. They were just rubber-stamping it. So they were not contributing at all to this particular process. So why waste your time? I'm not going to sign this anymore. I threw the responsibility back to the business. I told them that if they were not engaging my team to help solve the problem, then they own the whole problem. But I would rather be part of the solution. And if the business allowed us to be part of the solution, then I would put my analyst also to do the UAT [User Acceptance Test]. Because when the analyst is working on the problem upfront, they would make an estimate on what the campaign lead volume would look like, so that when the campaign team goes to execute it, and if they come back with a different number, you would know that something had gone wrong. The analyst could have gotten it wrong initially or the campaign team could have screwed it up. But you have a point of reference.

PAR13   So I told the business that they would be taking higher execution risk because they were not involving the analytics team upfront. The business didn't like the sound of the word 'risk' and so they started to pay attention. So the analytics team is now responsible for the campaign targeting criteria, setting up the test design, they'll look at UAT to ensure that things are implemented correctly, and of course they would be responsible for introducing the models or segmentation into the campaigns. And after the campaign is executed, they need to review the tracking. While I can have someone in India run the code for them, the analyst would still be responsible to look at it, understand it. So the analysts own the whole life-cycle. And that was such a mindset change for them! They fed back that they were being made to do more operational work. I told them it was important to do it, because this is your 'baby'. I wanted to them to experience that first moment when I did the credit line analysis right after college and I made an impact to the P&L. "I made it happen".

Eric   So as the analyst is now translating the data problem into a data solution, how do they converge on the type of data solution to provide? Is it led by the business? Do they tell you the kind of solution they want? Who makes the decisions today? Or is the analyst left to decide that? And if so, how does the analyst know the right fit for the data solution?

PAR13   Some analyst thinks the business knows what it's doing and they therefore just follow their instructions. They abdicate any sense of responsibility, doing only what they are told. But I'm trying to give them the mindset that the analyst are also the business owners, and in some sense, they may know

more than the business stakeholders. Because if you are thinking like a business person, and you have the power to access and analyse the data, you are in a much stronger position.

PAR13   In terms of career path, people use to say that from Decision Management, you would go into the business. So many of our seniors have done that, including our current regional Decision Management head. But I feel differently. I find the business stuff uninteresting. And if I did my Decision Management work properly, I have more control over the business than the business stakeholders. So, does the analyst accept the role that they are in a better position to make better strategic decisions for the business than the business stakeholders? If you are willing to accept that, then the way you make your presentation would be very different. You would be interpreting and positioning the recommendations as opposed to just reporting on the data, or coming back and showing a segmentation.

Eric   So let's say the analyst agrees to be a co-owner and wants the latitude to decide for and drive the business. But many of these analysts have never worked in the business. So how would you provide them the right inputs. Because 2 different analysts can propose 2 different solutions to the same problem. So what are the mechanisms that allows the analysts to know which is the better solution? Or it just based on personal experience? Or is it something that happens within the Decision Management team structure itself that allows them to converge? Or is it something that has to happen between Decision Management and the business, even though the business gives them the latitude, such that it shapes the way the analyst think about the data solution?

PAR13   It's ok that the different analysts have different answers to the same problem. Part of the preparation is that you have to give them critical thought. What makes a great analyst is the questions they ask, not the answers they give. A sophisticated answer may not be the best solution, and the business may not need or accept that as they have time and resource constraints to consider. For me, I've got my toolbox and I recycle my solution approaches. And I should be stealing shamelessly from others, and this is the best part of the Decision Management community where we can tap on the experiences and implementations from the other countries. But I fantasize about the future of Decision Management, and all the stuff we've not yet done and where we could take this function. I see my job as a coach to my analyst. They come to me and I hit them with hard questions about their work. I question their critical thinking process. So there was this analysis that we were doing and there was no test and control and we couldn't be certain whether the performance difference was due to the new changes. So I made a few simulations - what would the numbers look like in one scenario versus another and make some reasonable assumptions. So I don't go to the business with a conclusive opinion, which was not possible, but I reduced some of the uncertainty by laying out the scenarios, and in the worst-case scenario, we were still making money. So ultimately, it was helping the business make better decisions.

Eric   OK, so let's say the analysts embrace co-ownership and through experience and best practice sharing, they make better data solutions. In constructing the data solution, they need to take into account the constraints that may prevent

a good translation of the data solution into a business solution. With some of the Decision Management resources based in an offshore location [Bangalore], and perhaps in the future, most of the resources may be based there, do you see the ability to take a business problem and turn it into an implementable business solution becoming a challenge ... even if the analysts want to own it? Even if the interaction was good and they had a virtual seat at the table?

PAR13   If the relationship is strong, if they are able to build that relationship with their business partner such that they can influence them even though they are in a remote location, it can work. But I do see some barriers. One of the barrier is the personality of the analysts. Most of them tend to be introverts and it doesn't matter if they are sitting onsite or offsite, it would result in the same relationship dynamics. They have to make the effort to build the relationships And in many ways, the way to build relationships is through work. It helps if there is continuity, meaning they stay long in the job, and so does their business partner. One of the issue with the offshore centre was the high turnover, and for a variety of reasons. While the onshore team has lower attrition. My observations are that people in Asia have been at their jobs for a very long time, and it's therefore hard for the analysts in the offshore location to establish a relationship, further compounded by them not being in the room. There are people here who think of the offshore analyst as just temporary staff, but I differ. I would be willing to identify the high performing analysts give them a voice in the room. You can improve the interaction by bringing them over onshore for a while. And you can select the more senior talent to front it. I've done it before. I've brought them onshore as part of their career development and improving their abilities to talk and interact, and getting projects done.

Eric   Eric thanked PAR13 for his time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections.

Participant Code	PAR14
Title	Analytics, Insights &Implementation Head, Business Analytics
Organisation Code	ORG7
Date	May 25, 2016
Legend	[xxx] implies redacted due to participant confidentiality

Person	Transcription
Eric	Eric thanked PAR14 for setting time to have this interview over Skype.
Eric	Could you share a little about yourself and your work experience?
PAR14	I'm 32 years old and I've been working for around 12 years now. I graduated with a Bachelor's degree in Statistics and I have a Masters in Computational Finance. My first job was with Globe Telecoms but it was only for 4 months. I then joined ORG3 [Philippines] where I stayed for 10 years. I started in ORG3 as an MIS [reporting] officer and after 2.5 years, I transferred to Decision Management. And in Decision Management, I went across the functions of Campaign Management, Credit Payment Product Analytics, and Retail Analytics. After those fabulous 10 years in ORG3, I joined SAS Philippines under the Customer Intelligence Practice in the Sales Support function. I stayed there for over a year. And in Nov 2015, I went back to Banking and joined the ORG7. At ORG7, I'm the Analytics Insights & Implementation head.
Eric	So all 12 years of your career was completely in Analytics, in one form or another?
PAR14	Yes.
Eric	I would like to hear from you what Analytics means to you, because different people interpret the term differently. A person from Technology might interpret Analytics as Datawarehouse, while a Data Scientist may interpret it as Artificial Intelligence. For the purpose of my research, I'm using the broad catch-all term 'Business Intelligence & Analytics' (BI&A), however it may be interpreted by different people. So, I would like to hear from you what BI&A means to you; how you define it.
PAR14	For me, I define Analytics as looking for answers to business problems by looking at the data that you have. And it's not just any solution, but you must find solutions that you can implement across the business, and implement it in such a way that you've considered all the aspects including Compliance, Legal. And you must be able to measure those findings. For some people, Analytics can mean a technical or statistical modelling, but for me, it can be as simple as MIS or even a simple ratio that will be meaningful and will have value, and will be a basis for decisions.
Eric	So you are saying that ultimately, it has to linked back to decisions. If there's no decision-making coming out of the analytics then …
PAR14	Then there is no value.
PAR14	If you cannot put meaning into your statistics or summary, then that' not really Analytics or Analytics & Insights. Because there's no insights you can

get. So now when I talk to my analysts, I often ask them, "what does that mean?" When they come up with a decision tree, I would ask them how they would interpret in terms of business sense, and how we would apply that. If it's not something that's meaningful, then it really isn't an output of Analytics.

Eric   Can you describe how your Analytics team within ORG7 is set up? Who does it report into, and who reports to you?

PAR14   We're called Business Analytics, and headed by PAR18 Bueno. And she reports into the Chairman of the bank. And under Business Analytics, there are 3 teams. The first team is Data Infrastructure. They are in charge of setting up and getting data from all the different sources, coming up with the data structures, so that the resulting data marts or databases can be used by the different analytics functions. The second team is my team, called Analytics Insights & Implementation. The scope is very broad. When I look at my job description, it's looking for revenue opportunities, validating assumptions about how a program would work. And then the last team is Modelling. They are in charge of building models.

Eric   Modelling is not part of your team?

PAR14   No, it's not part of my team. But it doesn't mean we don't do modelling in my team. For my team, it's mostly on the exploratory part - it's being able to describe or find segments. But when we operationalise it, we would be transferring it to the modelling team so that they can manage the model lifecycle and validate and recalibrate the model on an ongoing basis. Right now, we are still missing the person to lead the Modelling team.

Eric   So how large is the Business Analytics team today?

PAR14   We have a total of 10 available headcounts, with 9 of us in. So we are just missing the Head of Modelling.

Eric   So you report into PAR18, and PAR18 reports into the Chairman?

PAR14   Yes.

Eric   So is the Business Analytics function a Consumer bank-only function or is it bank wide?

PAR14   It's a bank wide function, so we cover both Consumer and Commercial. And we cover all the products. We even cover Customer Experience.

Eric   Within your role as Analytics Insights & Implementation, you mentioned that it's focused on revenue-generating activities. Is that within the space of customer intelligence or it doesn't matter, and it could be looking at operational restructuring?

PAR14   Yes, it could even be looking at efficiencies in terms of the processes. We did a recent project where we automated a manual process which the business found very helpful. Because instead of looking at each application

one by one, and looking at all the qualifiers for a lead, but now that we've automated a campaign filter, they are very happy with it.

Eric   So are all 9 of you in the Business Analytics team seated together?

PAR14   Yes.

Eric   And is the location where you are all seated, co-located with the business?

PAR14   I wouldn't say it's co-located or separate. We are in the same building with most of the business, although City Savings which we support, is operating out of Cebu. But in terms of proximity, we sit near the Risk folks. There's also Retail Banking on the floor where we sit. So we somehow near the business stakeholders that we support.

Eric   Could you describe how you interface with the business today? Are you the main interface for the Business Analytics team? Or does each of the 3 teams meet with the business independently?

PAR14   Yes, we all meet with the business. Sometimes me and [xxx] [Head of Data Infrastructure] would be in the same meeting. Because I would need data, especially now when we don't yet have a datawarehouse (we're setting it up), and so I would need his support to come up with my analysis. And I usually bring my analysts to the meetings, because it's a huge business to cover. Our first few projects were in Cards, but we also want to bring focus to the other lines of business as well.

Eric   But would you say that you are the lead interface between Business Analytics and the business? So if the business has problem and needs to meet with the Business Analytics team, who would attend? Would it be you?

PAR14   Yes, it would be me. And also PAR18.

Eric   And only when you get deeper into the discussion and you need data and stuff that you bring in [Head of Data Infrastructure] into it?

PAR14   Yes.

Eric   But as a start, you own the business problem - it originates with you?

PAR14   Yes, typically it's that way. When they are talking about the objectives at the start of the meeting, it would be me. And then as we go deeper, we would begin to include the other members of the Business Analytics team.

Eric   In campaign management, there is the campaign design process (target selection, modelling) and there is the campaign execution process (leads extraction and fulfilment). So does campaign management sit with you completely or does it sit with the infrastructure team?

PAR14   It sits with the Infrastructure team. Typically for the first run, when the Analytics & Insights team comes up with the analysis, we would execute the campaign first, and then we turn it over to the Infrastructure team.

Eric	So the Infrastructure team is in charge of the executional and operational aspects of the Business Analytics team? This would include MIS, campaign leads extraction?
PAR14	Yes, it would be them. They are the ones in charge of those activities.
Eric	So your team is primarily focused on problem solving, exploration and figuring out why things don't work the way they should. And for execution, it gets handed over to the other team. If there is a model to be built, it goes to the Modelling team. And if there's a campaign to be executed and new pieces of MIS, it goes to the Infrastructure team.
PAR14	Yes, but it's more of a partnership than a handoff. I go directly to the analyst within the Infrastructure team to ensure that they are following my requirements for the implementation.
Eric	So would it be safe to assume that the Infrastructure team interfaces more with you than with the business? Because when you do the analysis, and there's a new report or new KPI to track, you will be the one designing the requirements, of course based on what the business needs; you drive the requirements and inform the Infrastructure team. [Head of Data Infrastructure] doesn't meet separately with the business to figure out how to implement the analysis. You play the role of the relationship manager.
PAR14	Yes.
Eric	Is there a reason why the Business Analytics team is designed this way?
PAR14	From what I understand, the Data Infrastructure team was designed to focus on the data, so that the Analytics & Insights team can focus on the analytics. For Modelling, the profiles of those analysts are more geared towards having the deep requisite statistical competencies to build, validate and maintain the models.
Eric	But do the modellers get involved in the problem-solving aspects? Or is it that you inform them of what models you need to execute on your analysis?
PAR14	It's the latter.
Eric	So in many ways, you are the problem solver. You have to clarify the problem with the business.
PAR14	Yes.
Eric	And do you feel that this particular organisational design is effective?
PAR14	Yes, I think it is effective. But I also encourage the Data Infrastructure team to get engaged and really understand the problem at hand. So I would always go to them and explain what needs to be done, rather than just telling them to do it.

Eric	But because they are Data Infrastructure, they would have a deeper understanding of what data is available and what data is good-for-use versus your team?
PAR14	Not really. Right now we are in progress of building the data marts, but my team has already constructed our own mini data marts so that we could proceed with our analytics work. So while the Infrastructure team working on building the big data marts and getting the single customer ID across the lines of business, my analysts are working on the raw data. For example, my Cards analyst is looking into the raw data of cards and exploring it. And I'm encouraging him to say that it's good we are also doing this data work so that we develop a deeper understanding of the data. Because there are certain intricacies with the data. When you do your analysis, you'll be able to do it better when you understand how the data works. Although functionally, the idea is that my team is supposed to focus on the analysis. But right now, given that we are in a 'start-up' phase, my analysts have to go straight to the data [source].
Eric	A hypothetical question: let's say 5 years from now and you are no longer a start-up, you are a matured analytics function. And with people leaving and new people joining into your team. But because you don't manage the data, would the new people coming in be as successful in knowing how to interpret and use the data?
PAR14	I think it would be harder for them to understand all the intricacies of the data. Because that's what I experienced before. When you are not the one doing the testing of the data, your understanding of it will not be that full. So I would think you would need a longer period of time to get a holistic understanding of the data. And sometimes when you see certain patterns in the data, it might be a systemic problem with the structure of the data. So those things are typically discovered over time. So to your point, if someone is doing purely analytics and goes straight into processing the data, the understanding won't be very holistic versus someone who knows all the intricacies of the data.
Eric	So this is the set-up to the question I'm trying to explore as part of my PhD. Today, there are many banks and industries with analytic functions. But only a very small percentage would dare say that they are successful with analytics. And it's not that they have hired the wrong people, and even if at the top, the seniors are interested and supportive of analytics, somehow the success rate is quite low. I have a theory as to why this is the case. [Eric then proceed to share about the nature of uncertain and equivocal problems and how organisational mechanisms can help reduce it.]
Eric	Let me introduce a construct to you: business problems are translated into data problems, data problems are translated into data solutions, and finally, data solutions are translated to business solutions. At each step of the way, there is ambiguity or multiple interpretations that happens. And I'm trying to understand how we can cope with it. So today, when you meet with the business, how do you translate a business problem into a data problem? So let's say the business says to you that they want to increase their cards utilisation. That may not be the business problem although that's what he wants. What the actual business problem is, he may not even have told you

yet. How do you take that kind of request and translate it into a data problem? Ok, so for cards utilisation, I need to look at credit line utilisation, cards sales, acquisition, etc. In your mind, you've already got some assumptions that if you were asked these types of questions, you would pull out these kinds of data that is related to the question. So how do you make this leap to translate the business problem into a data problem? How do you know which relevant data to interpret? Is it based on a discussion? Is it based on your experience?

PAR14 I would look at the available data that I have and look at what is the current utilisation and what are the drivers of utilisation, and then I'll look at the segments where I have the opportunity to increase the utilisation. So with that, it becomes a data problem; I'm already looking at the variables I have and summarising it.

Eric But how do you know which variables to look at? What gives you that knowledge?

PAR14 It's mostly experience and knowledge of the drivers of utilisation.

Eric So domain knowledge is extremely vital to be able to translate a business problem into a data problem. If you had a new analyst who came in fresh. He could be a fantastic data scientist but without this domain experience, he will not be able to translate the business problem into a data problem?

PAR14 Yes, it would be very difficult for that analyst because he wouldn't know which data to use.

Eric Even if I were to explain to him what 'utilisation' means, he would not know what data to look at?

PAR14 Probably if he was a very smart data scientist, he would look at all the available data and probably build a correlation matrix to shortlist which variables are correlated.

Eric Using some kind of brute force approach …

PAR14 Well, I was talking to one of my friends in the gaming industry and he was relating his experience with a SAS consultant who did exactly as I described. The SAS consultant was unfamiliar with the gaming industry and he built a correlation matrix to identify they key correlated variables and then build a segmentation. And when the SAS consultant presented his analysis to my friend, the only comment that my friend said was, "I already know that!" So it's really hard to answer the question posed by the business if there is no business domain knowledge. You would end up just identifying the obvious patterns and customer segments. In the case of the SAS consultants, he identified the high rollers which was obvious for the business. Similarly, if we go back to the problem of utilisation, if someone doesn't have a background in credit card, he would probably not find any beneficial answers for the business.

Eric Coming back to cards utilisation, when the business asks you to help them improve the utilisation, typically as an experienced analyst, what you would

hear is, "I want to increase my profitability." And the business believes that if they can increase the utilisation, they should logically make more money from the interchange fees and hopefully to make even more money from the revolvers. So the statement of 'increase utilisation' gets translated as a business problem where 'I am short of income, and I want to generate more income through either interchange or revolving interest'. Perhaps increasing utilisation is one means of solving it, but there may be other ways to get income. So if you take and unpack that business request, the request may have a different objective. You may end up not solving utilisation because what the business wants is to find incremental income. And if you could find him income in alternate ways, the business may not mind, because that was the real problem he had. So this experience that you have when you hear 'utilisation' but interpret it as 'income' ... if you were not seated near the business and you were in a remote location, or if you did not have a seat at the table, that PAR18 did not report into the Chairman, do you think you would be able to do these sorts of interpretations better or worse?

PAR14   I think it would be worst because you will just be answering the question that is given to you without knowing what is the underlying, or what is the precedent to that question. Because probably, the person who approached me on the utilisation question, he would already have in his mind that if he increased utilisation, he would be more profitable. But if I didn't know the person and I was just an order-taker, then the interpretation or recommendation that I would give to the business might be something that may even worsen the revenue situation. So for example, we may end up increasing utilisation on those spend where we don't get good interchange, then it won't be beneficial for the business.

Eric   So how do you create the right mechanisms so that you are plugged into the business to understand the context of the question? That means you have background information; you know what's happening. For example, a mechanism may be that "PAR14, you must sit on the Cards management team." Or you must meet with the business once a week. So that you can get background and context to the business. So that when the business asks a question, you can immediately understand why the question is being asked.

PAR14   I don't think we have a formal mechanism set up for that. But it starts with having really good relationship with the business stakeholders so that you can even understand them while they are thinking out loud.

Eric   Have you had any formal experience with offshoring of analytics teams?

PAR14   No.

Eric   So you've always been onshored and your engagement has always been face-to-face and in-country.

PAR14   Yes.

Eric   And even in-country, you are not seated at different locations? You are always seated in the same building so that you have the opportunity for face-to-face?

PAR14   Yes.

Eric   So you would not be able to comment if you did not have the face-to-face
         whether you would be able to create and sustain this relationship to get
         background and context?

PAR14   Personally, I don't have that experience. I've never had that kind of
         relationship with the business.

Eric   OK. Now when you translate a data problem to a data solution, this again
         can have many different interpretations. Should it be a segmentation? Should
         it be a predictive model? Or should it be some kind of flag in the CRM
         system? What kinds of situations do you encounter today - do you get into
         situations where people disagree? "We all look at the same data, but we all
         don't think the solution is the same."

PAR14   In the engagement that we have with ORG7 right now, the business mostly
         let us decide on the data solution. They don't question our proposed solution
         approach.

Eric   But do you have different views within your analytics team? So while the
         business may not tell you to build a decision tree, within your own team, do
         people argue about the type of data solution? Or they say, "PAR14, you
         decide, because you are the boss."

PAR14   If we have a conflict of solution, sometimes we just run both solutions and
         compare which is more effective. But we really haven't experience any major
         arguments.

Eric   Currently, what are the considerations in making a decision on the data
         solution? Is it based on speed (fast and easy) to realise value, or is it based
         on ease of the business to understand - it may not give me the best results but
         it's the most practical way? Or it's based on the most optimised and sharpest
         results possible, even though it can be difficult to implement.

PAR14   For that, I think it's also about being able to translate it to business. For
         example, decision trees are easy to build and easy to explain to people who
         don't have a background in analytics. Although right now, we have projects
         where we are introducing more sophisticated models. In these cases, we
         simply show the result to the business, and I think they will be fine with it.
         We usually pick the easier solution because of the time crunch to come up
         with a solution.

Eric   And you are confident that you can implement it? You are aware of the
         business constraints? Because there are cases where you can build a model
         but it's not implementable.

PAR14   I've experienced that before in ORG3.

Eric   How do you gain that awareness of the business constraints?

PAR14   Right now, we are very engaged in terms of implementation. We even talk to
         the call agents - how they receive the leads that we give them, how the

queueing is done. We engage with technology so we also know how our leads get uploaded into the system, and how the call-outs will be done. So we ask questions as to whether we would be able to implement it in a particular way or would our analysis be a waste of time because in the end you can't implement it. For example, in one project we initially thought of building some kind of prioritisation flag, but in the end, we found out that the system could not handle the prioritisation. But in engaging with business and technology, even that system would be enhanced to eventually handle the prioritisation.

Eric   In this example, you had built a solution only to realise after the fact that it could not be implemented …

PAR14   Yes, we realised it when talking to technology and the call agents.

Eric   So already when you are building the data solution, you are already thinking ahead whether it can translate into a business solution and deciding what kind of technique I should use because I have a view how it should logically be implemented?

PAR14   Yes, This came from our experience in ORG3 where we always considered how the solution could be implemented, particularly when we were dealing with our real-time campaign platform.

Eric   Here is a hypothetical question. Because of your experience in analytics, I would like to get your views. Let's say you were asked to double or triple the size of your analytics team by senior management. But budget is a constraint and it would not be possible to have the entire team based in the Philippines because cost is rising and talent is expensive. But there are a lot of cheap resources in China. So they ask you to build an offshore team in China. Firstly, would you do that?

PAR14   I would fight for them to be onshore because it's easier to handle the team. It would be difficult to re-translate the business questions or requests to someone who's remotely based. But if I don't have a choice but to go ahead, then I would be selective of the type of work that I would be offshoring. So the work that I would offshore would be the simplest and least ambiguous in terms of interpretation. So that they just follow instruction and there will be less room for error.

Eric   Why do you think mis-interpretation happens when it's not onsite?

PAR14   In my opinion, mis-interpretation can arise due to different meanings for different things. Let's say tax which is different across countries and you have to really explain it line by line.

Eric   So if I had to pin it down, it's not about having the person in front of you or the ease of talking face-to-face, but the fact that someone is onsite means they share the same background as you, the person shares the same culture or values; he understands a word in the same way that you do. So if there was a Filipino in China, let's say you have a whole Filipino team in China, and they all grew up in the Philippines, but now they happen to be working in China because of cheaper premises cost.

PAR14   It would depend. If I know the person and I'm very comfortable with him, and he understands how I think and how I would want things run, then maybe I'll be ok with it. Because even right now, in my dealings with ORG7, I come up with terms that apparently only I understand. I was talking about Personal Loans today and I was using the term 'top-up' and I saw the blank face from the risk person, and so I stopped myself and asked her if she knew what 'top-up' means? So to set up that function offshore, all these kinds of definitions need to be in place and clear. Even the term 'CLI' [credit line increase]. It's a very ORG3 term. But it's not a term that use in ORG7. So it's hard to control that without close interactions. Another example: I was talking the technology folks about 'leads' and I was asking them how the 'leads' pass through the system after the call is made and tagged, and the technology person had a blank look on his face. So I asked him, "What do you call 'leads'?" Or even the term 'upload'. So the mis-interpretation can be on something that's very basic. The technology says, "We call 'upload' as 'save the file'." And that's the difficulty if you don't deal closely with the person. Because you can see their gestures and facial expressions.

Eric   And if you were calling someone remotely, you may not realise that they didn't understand you because you couldn't see their faces. Or they may understand you differently.

PAR14   Yes, they might be doing something else based on their assumptions. Because they may be too shy or scared to clarify. And you'll be finding mistakes and inconsistencies later on where some of the numbers don't make sense.

Eric   You've had the opportunity to see analytics in ORG3 grow from a support function to, I dare say, a business driver function where you become more consultative and you are part of the business. And in that evolution, when the analytics function matures and you have a seat at the table and are engaged in more complex problems, does it also imply that you are able to interpret more ambiguous types of problems?

PAR14   Yes, I would think so. Because it's difficult when the information is being passed on when you don't have a seat at the table. So like your utilisation example, maybe the real problem there is revenue. So I believe that interpreting ambiguity is something essential to make the function more effective.

Eric   So between the two, for an analytics team to be more and more influential, it can have more capability to deal with ambiguity versus having more capability for doing more sophisticated solutions. Because you can hire a lot of data scientists and build more and more advance models and complex solutions. What do you think the business values more?

PAR14   Is your question as to which would bring more value?

Eric   yes, correct.

PAR14   I would think it would be the capability to deal with more ambiguity, because that's really the root of the problem. I think that building more

sophisticated models is secondary. Being able to understand what you are solving for is the most important.

Eric   Eric thanked PAR14 for her time, and informed her that he will be sharing the transcribed notes with her to allow for opportunities to make any changes and corrections.

Participant Code	PAR15
Title	Business Analyst
Organisation Code	ORG8
Date	May 26, 2016
Legend	[xxx] implies redacted due to participant confidentiality

Person	Transcription
Eric	Eric thanked PAR15 and explained the BI&A organisation design research.
Eric	Perhaps we can start by having you provide a description of your work experiences and background.
PAR15	I've been doing analytics for about 10 years. Prior to that I was doing market research, which was my first job which I did for 4 years. 10 years was in Banking. In market research, I was doing reporting and not the field work of research and data collection. I started out in Banking with ORG3, doing campaigns, and then moved on to do analytics work in retail banking customer segments. Then I move to [multinational bank] where I covered the cards and lending portfolio. So all in, I've had 14 years of work experience. My academic discipline was in IT, but I loved Mathematics.
Eric	And what is the role that you are currently doing?
PAR15	Right now I'm doing a business analytics role with ORG8, covering customer segments and channels.
Eric	And who do you report into in this role?
PAR15	The current role in under the unit of Decision Management, which is under Group Strategy and Performance Management. The Decision Management unit has a few pillars. One of the pillars is Business Analytics. Another is Credit Risk Analytics. Then there is Infrastructure. And there is Campaigns. I'm reporting into the head of Business Analytics.
Eric	When you use the term 'pillars', are you referring to a vertical group of people resources dedicated to that activity? You don't cross into each other's work?
PAR15	Yes.
Eric	In this discussion, I'm going to use the term Business Intelligence & Analytics (BI&A). I'm not going to make a value judgement as to what is Analytics as many people have differing views and interpretations depending on their personal backgrounds. But I would very much like to hear from you what BI&A means to you?
PAR15	If I have to put it into context, and compare it to MIS [reporting], tracking, analysis and also modelling; in that 4 contexts. To me, MIS is reporting about what has happened, whereas Tracking is after something has happened and you check up on it. Analysis is more in-depth where you find reasons on where, how it happens. Modelling is the part where you know all the reasons and you want to predict an outcome. So BI&A to me is the next level of

MIS, where you have to do more ground work to understand why and what is the problem and business issues ...

Eric   More problem-solving?

PAR15   Yes, more problem-solving.

Eric   You've have the benefit of working in a variety of different organisations. In big banks such as ORG3 and [multinational bank], one would argue that they are more matured in their analytics function. One of the things I want to understand is how important is having a seat at the table to be an effective analytics team. In ORG3, I know that the head of Decision Management was part of the management team. Was it the same in [multinational bank]? If you could share your thoughts on where the Analytics team sits within the organisation and how senior the function is within the organisation. How do you see that impacting your work?

PAR15   I think it's very important for the head of the BI&A teams to be involved in the management committee of the bank.

Eric   Why?

PAR15   Well, I've been across a few banks and environments. In ORG3, the structure was very clear - Decision Management was an independent unit, although when I first joined it was under Marketing before it became independent.

Eric   So did you see the nature of the work change when ORG3's Decision Management transitioned from Marketing to an independent unit?

PAR15   I had only joined a few months before it became independent, so I can't comment on the state of things while it was in Marketing. But I definitely felt that change as an independent unit - the focus changed when you have a direct line to the consumer head. That's where the unit became so important, and the work that we did became visible.

Eric   Visibility aside, did the type of analytical problems that you handled changed? And did you feel that you became more effective as a result of this shift towards independence?

PAR15   Maybe it's better if I took the example in [multinational bank]. There was Marketing Analytics, which is independent and reporting into the head of consumer banking (although they had a dotted line to Marketing for a while), and the function I was in was reporting into Finance. We were called Strategic Business Information Management (SBIM). Of course there's overlap between the 2 units. The focus in the Marketing Analytics was purely on campaigns and so they didn't have a lot of interaction with the business.

Eric   But campaign is an essential part of business, isn't it?

PAR15   Yes, but in terms of portfolio MIS and business performance, they don't look at that. The role is covered more by Finance and hence SBIM.

Eric	So your Finance Analytics team was more powerful and influential than the Marketing Analytics team?
PAR15	Because of the talent pool, SBIM was stronger than Marketing Analytics.
Eric	What do you mean when you use the term 'stronger'? Does it mean you have more authority or decision rights?
PAR15	Yes. Because the head of Finance was more involved in all the management meetings.
Eric	And the head of Marketing Analytics was not as involved in the management meetings?
PAR15	I don't think he was involved as much. Only at certain levels?
Eric	Isn't the Finance head and Marketing Analytics head peers?
PAR15	Finance is more senior. So everything would go to SBIM rather than Marketing Analytics.
Eric	OK.
PAR15	So comparing to ORG3, it's something very different. But it kind of works. But at a certain point, they wanted to phase out SBIM and move it back to business. Because Finance was a support function and they wanted to focus on core Finance. And that's when I moved.
Eric	Let's stay on that topic as I want to unpack it a little bit more. Just because your boss (regardless whether it's Finance or Marketing) reports into the consumer head, how does that make your work different? Perhaps it feels nice that your boss has influence and is senior, and perhaps that makes me feel more politically powerful, but does the nature of your analytics work change? Do you do anything just because your boss is a one-down to the consumer head?
PAR15	I would say 'Yes'. In the case of [multinational bank], the SBIM worked on Portfolio and P&L related stuff. We would develop product dashboards instead Marketing Analytics. The business always comes back to SBIM for all the baseline analysis before running their campaigns.
Eric	But what about problem-solving? Such as why am I not making enough income, why is my product utilisation low? Who solves that?
PAR15	I would say SBIM.
Eric	You guys also do that? So if a product is not doing well, or the customers are not well-engaged, you end up becoming the business analyst to figure out why?
PAR15	Yes.

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Eric	And you attribute that to your boss being a one-down to the consumer head? It allows you to take on these kinds of work?
PAR15	Yes. Because that's how the function was set up, with a strategic intent under Finance.
Eric	OK. Let's switch gear a little bit. Now that you are in ORG8, and your head of unit is also a one-down to the Group CEO which is even more impressive than being a one-down to the consumer head. Do you see a difference also? In terms of the kinds of problems you can solve? In terms of being effective as a business analyst?
PAR15	I'm still too new in the role to comment. I can see that they are working on strategic business planning. But cascading it down to the analytics team to drive exploration … I don't see that it's there yet.
Eric	And the reason for that is because of the alignment of the organisation?
PAR15	I believe they are working on this transformation. Because the previous team had left and the function had sort of collapsed. And they've just set up a new team. I don't know why, by they claim that they don't have resources and talent to come up with this kind of [strategic] work.
Eric	They want to do this kind of work?
PAR15	Yes, but they are currently hampered with too many MIS - they generate 600+ reports in a month.
Eric	But you mentioned that you have different 'pillars'. Aren't the pillars already designed to isolate MIS so that the team can focus on their own activities?
PAR15	It's supposed to do that, and they are moving towards that. But I'm not sure how fast it would happen. And because the team members are also new.
Eric	So you are doing MIS today also in your current role?
PAR15	Building data marts and also doing MIS. So 'Yes'.
Eric	But in the 'pillar' design, are you supposed to do MIS?
PAR15	Yes.
Eric	So when you say your pillar is Business Analytics, what is the charter, or scope of work?
PAR15	MIS is still one of it; that's a given. On the portfolio activities, campaign pre-sizing is not within the Business Analytics scope. The Campaign Management team will handle that end-to-end - they will do pre-sizing, execution and tracking.
Eric	So the Campaign team has more analytical abilities?
PAR15	I'm not sure; I can't answer this.

Eric   But the Campaign team can build propensity models as part of the campaign deliverables? Who builds that?

PAR15   The Business Analytics team builds the models.

Eric   OK. But the design of campaigns sits with the Campaign team?

PAR15   Yes.

Eric   But who faces off with the business stakeholders? Is it both the Campaign and Business Analytics teams? Do they both have equal face-off 'rights' with the business?

PAR15   Yes.

Eric   And the business knows which team to go to?

PAR15   I think they should know.

Eric   I'm going to show you a construct and discuss how ambiguity occurs in the process. Typically within the BI&A space, you have a business problem. You translate the business problem into a data problem when the business stakeholders come and talk to you. And then the data problem gets translated into a data solution. And then the data solution has to be re-translated back to a business solution. At each step of the way, there is ambiguity. Of course, probably the highest level of ambiguity is at the front - translating a business problem into a data problem. In your experience having worked as an analyst across several banks, you've been exposed to many business problems. To be able to translate what the business stakeholder is telling you - which may not be expressed as a business problem - he may be saying something different - then you have to interpret what the problem is. How important is sitting next to the business in being able to do the translation from business problem to data problem? If you were seated together, or perhaps within the same building, or in different buildings, or in a different country. How does proximity impact your ability to do that translation?

PAR15   When I joined [multinational bank], I was supporting both Malaysia and Singapore in my role. We were here in Malaysia communicating to our business stakeholders in Singapore via phone. I would say it may not be as effective if proximity was not there.

Eric   Why? What was not effective?

PAR15   Because the engagement is not so strong; the business stakeholders only look for you when they need you. Physical proximity is a big enough deal.

Eric   You say they come to you only when they need you, But because of the distance, do you experience that the users complain about irrelevance or incompleteness with the analytics work?

PAR15   No.

Eric	So despite the distance and the fact that there was less 'relationship closeness', but whatever the business stakeholders ask of you, there was no gap in understanding from your side? You are able to interpret it well and deliver to their expectations?
PAR15	Yes. Also, my Malaysian business users received more attention from me due to the face-to-face connection.
Eric	But was the quality of the work higher for the Malaysia users vs the Singapore users because of the face-to-face interactions?
PAR15	I think it depends on who is making the request. The more influential business persons sit in Singapore, and so they receive a higher level of work prioritisation.
Eric	Was your team a regional team, even though you sat in Malaysia? Meaning that you also had your Finance team colleagues sitting in Singapore?
PAR15	No.
Eric	Your colleagues were all entirely in Malaysia?
PAR15	Yes.
Eric	So you were an offshore unit for Singapore.
PAR15	Yes.
Eric	Could you share your experiences when things went wrong because of this distance?
PAR15	It's not that something went wrong but it's that "it's not enough". I visited the business stakeholders in Singapore, and the interaction was different when it was face-to-face. When you can sit next to them and draw out the things that they want. Compared to when you are talking over the phone.
Eric	Was it a question of trust and familiarity?
PAR15	No, I don't think so.
Eric	It's just that things are easier to communicate face-to-face than on the phone?
PAR15	Yes.
Eric	But you can have video conference?
PAR15	We don't do video conference. Just phone and via email where we go through what they are trying to visualise.
Eric	So there's a lot more potential for mis-interpretation and mis-understanding because you couldn't do the visualisation of the problem face-to-face?
PAR15	Yes, I would say that.

Eric	But you mentioned that the work [output] didn't suffer - the quality or the relevance of the work didn't suffer.
PAR15	Yes. They had to communicated very well to ensure that.
Eric	Now when you translate from a data problem to a data solution, how do you know the appropriate solution that fits it? As an example of what I mean in terms of translating a data problem to a data solution: assume I have a card utilisation challenge. In of itself, that may not be the problem, the problem may be a business income problem, in fact; you're not getting enough income and you are thinking how to increase the interchange or revolving interest earnings. But it's expressed to you as a desire to increase utilisation. When you hear the word 'utilisation', you know you are dealing with card spend, you are looking at payment, you are looking at credit limits. Because these are the natural association with credit card utilisation. So you already know what datasets you should look at. But how do you know what the data solution should look like? The data solution can be a segmentation, it can be a predictive model, it can be an optimisation model or it could even be a simple policy change or decision rule. But ultimately, I have to use data and package it into a solution to address the problem.
PAR15	It would be based on the discussion with the business to understand the real issue. They may want something straight forward such as identifying a segment to drive utilisation …
Eric	So the business tells you the solution?
PAR15	Sometimes they do. Sometimes they don't. In my experience in [multinational bank], the business stakeholders are quite well-versed and they do tell us the type of solution they want.
Eric	They explicitly tell you the data solution that they want?
PAR15	Yes.
Eric	And you agree to that solution or do you think they are not right?
PAR15	From my experience, they do make sense. But there are other business stakeholders who don't tell you the solution and leave it open-ended. "It's up to you. You are the data analyst. You go and figure out what is the data solution you should give me." So you have to understand what is the issue ...
Eric	But what are the considerations? Even if you know the issue … for example, I could predict customers who will increase their utilisation or customers who will increase their spending …
PAR15	I think time is also a constraint. If you want to build all these models, it will take time. So you try to find 'short-cuts'.
Eric	So your first decisioning point is: "I need to get a workable solution within an agreed timeline."

PAR15   Yes.

Eric   And that drives your largest consideration of how the data solution should look like?

PAR15   Yes, because normally business can't wait. Unless it's a 'nice to have', modelling always takes time to build. If they have the luxury of time, they might not mind waiting 2-3 months for you to complete your models. But more often they need it fast. And that's when we have to come up simple analysis that work.

Eric   If you had to look across your work experience, is it often that your data solution is irrelevant? Or incomplete?

PAR15   I would not know whether it's incomplete.

Eric   Doesn't the business give you feedback?

PAR15   They are happy to have whatever information on which to make decisions.

Eric   So the business doesn't tell you that the solution is not relevant or that you've missed the mark?

PAR15   I don't recall that happening often. There was one time when tried to do a segmentation from our perspective, and the Marketing Analytics team was also doing something similar, but it was different kind of segmentation.

Eric   So in that kind of instance, whose solution was better?

PAR15   The business stakeholders agreed with my team's solution, which was the local one. The Marketing Analytics team was then based in Singapore.

Eric   Why didn't the business agree with the Marketing Analytics solution?

PAR15   To them, it didn't make sense. I can't recall the full context of the reason, but they didn't agree with the method to predict post campaign behaviour.

Eric   They felt it didn't address their problem?

PAR15   They felt it was too far-fetched.

Eric   Not practical?

PAR15   Yes, not practical.

Eric   And this nicely takes us to the point of translating a data solution to a business solution. So do you feel that in this particular case, the Marketing Analytics team failed to translate it well?

PAR15   Sometimes the business just wants something very simple and straight forward. They may not agree to something that's fancy.

Eric	So the business feels that if they cannot understand it, they don't like it, even though it may theoretically be the right solution.
PAR15	Yes. Yes.
Eric	So in this particular case, your SBIM solution is favoured because you understood in advance that the local business wanted something simple and practical for their implementation? You already knew that
PAR15	Yes.
Eric	And that's why when you designed your solution, it was to address their current pre-disposition and preference? Even though you may have felt it wasn't the best solution?
PAR15	Yes. To know who is your business user is also important. Some business users are not fussy and you can give them the data in Excel and they will work with it; some are very hands on and they can work together with you to craft the solution. But if you didn't know that these business users preferred collaborative exploratory work, you may give them something else. You may give them some end output that they are not happy with.
Eric	Not happy because the solution is not relevant?
PAR15	Probably it's not relevant or it's not enough.
Eric	I have to believe there are many times like these where the business comes to you with a request but they don't fully articulate all the requirements, and all the things that they would logically need to make a better decision. And you have probably made that leap of faith and say, "I think you will need these data ..."
PAR15	Yes!
Eric	How do you do that?
PAR15	I think it comes with experience and talking with the business. Or even conversations from other departments. Because when you try to piece all the work together, for example, all those business issues always come back to the P&L. So from a Finance perspective, there are some issues you want to address as well. And likewise for the business. So if you have to marry both [Business and Finance] ... business would of course not know what is the best solution. I think it's not easy if you don't have the right engagement.
PAR15	One of my best experience is when we work as a team together – the analyst, the business finance and the product head. We had that good relationship and always brainstorm things together. The outcome is great.
Eric	I would call this "having background and context".
PAR15	Yes.

Eric	So what I'm hearing from you is that being onsite allows you to have more background and context because you are meeting people informally? In fact, you were saying that you are even getting some of these background and context not from the business requestors themselves but from other people and piecing it together.
PAR15	Yes, I think that's the important part of it.
Eric	So what organisation mechanisms allows you to be plugged in to get this background and context? Is it self-driven, for example you decide you need to do lunch with so-and-so or is it something more formal?
PAR15	I don't think it can be formal.
Eric	Why? Formality can take the shape of committees and taskforces. And governance meetings. That force people to meet on a regular basis, across a diversified group, so that these things can be aired, so that context can be shared.
PAR15	When these formal meetings happen, they talk about formal things that have been tabled. But sometimes we need informal ways of getting information.
Eric	So what are the informal ways? Having lunch?
PAR15	That's one of it, yes. Corridor talks. Smoking lounge.
Eric	And I have to believe that your vintage in the role allows you to synthesise these different sources of information to create a better context. And that you would not piece it together in the same way as somebody else because of that difference.
PAR15	Yes.
Eric	And have you seen that? Say within your team where you have as much access to the background and context information as your peers, do you get into conflicting interpretation?
PAR15	Yes, often.
Eric	Why?
PAR15	When the physical proximity is not there, it's very difficult for you to get these informal sources of information.
Eric	But within your own analyst team, serving Malaysia business?
PAR15	Because problem solving is very subjective. I may not think about the problem in the same way even though it's the same problem.
Eric	Are you saying that your peers may not agree to the same interpretation of the context?
PAR15	Yes, sometimes we don't agree.

Eric	But why?

PAR15	I'm sorry I don't know. I don't have the answer.

Eric	Was it ever discussed in the team as to how to get better convergence of interpretation?

PAR15	No. I think people are intrinsically unique and interpret things differently. Doesn't matter how much you elaborate on the context, there will always be differences in interpretation and understanding. It's human nature.

Eric	Let's say you have to build an analytics team. And you now have the experience of working across 3 banks. And I suspect each had a different organisation structure for their analytics team.

PAR15	Yes.

Eric	And each may have had a different scope of work. And the way ORG3 did it was the 'classical' vertical vs horizontal structure; where the vertical team face-off with the lines-of-business and the horizontal team supports the vertical teams. So if you had to design an analytics team that was good at interpreting problems, being able to get the background and context, being able to recommend a data solution that translates well to a business solution, how should the organisational structure of the analytics team look like? Bearing in mind that you will still have to do campaigns, you'll still have to do MIS, you'll still have to do some advance analytical work.

PAR15	I believe the most effective way is to have your 'front-line' and to have the 'support' at the back-end. The vertical and horizontal structures. What we had in ORG3 actually works. You definitely need an infrastructure team to support your analysts, and to do all your MIS and automation.

Eric	That's very much an onsite team design. If you now have a choice of doing both onsite and offsite, would that design still make sense?

PAR15	I think it would be very difficult to have business-facing analysts to be based offsite. I had that experience …

Eric	In [multinational bank]. And you were frustrated?

PAR15	I wasn't frustrated, but it was difficult. The engagement was not very high. So the business face-off should be local, together with the business. And the campaign and infrastructure team may be offshored.

PAR15	[multinational bank] actually had the opportunity to "experiment" the BA off-shore model. After about 1 year+, the Management realized it doesn't work too well. So, they hired their local BA but Infra team still remain to support SG & MY.

Eric	And should the onsite team be seated with the business? Or it doesn't matter?

PAR15   I don't think they should sit with the business. But the engagement with the business should be very high. They should be in all the business meetings, and attend all the major business review meetings - at least once a month, that's the minimum.

Eric   Why would you not want to sit with the business?

PAR15   I think it's a distraction. Because the nature of the analyst work requires space and quiet (for thinking). When the business is always rushing for things and having lots of discussions, it gets noisy, and you get drawn into their conversations.

Eric   So for you to be an effective analyst, you need to be close to the business, but not to close. You need your own space to think but at the same time, within reach of the business so that they can still engage with you.

PAR15   Yes.

Eric   Eric thanked PAR15 for her time, and informed her that he will be sharing the transcribed notes with her to allow for opportunities to make any changes and corrections.

Participant Code	PAR16
Title	Country Head of Consumer Bank
Organisation Code	ORG2
Date	June 13, 2016
Legend	[xxx] implies redacted due to participant confidentiality

Person	Transcription
Eric	Eric thanked PAR16 and explained the BI&A organisation design research.
Eric	Perhaps we can start by having you provide a brief background of your business experience, and in particular, your experience in working with Analytics teams, both in your current organisation and in the banking organisations prior.
PAR16	I started in Banking in the Marketing function. It was pure Marketing. But after 12 months, I also took on the Analytics team. What was then known as Business Intelligence Unit.
Eric	Which bank was this?
PAR16	It was [multinational bank]. And I ran it together as a consolidated unit of both Marketing and Business Intelligence. So that's where I got my grounding in data science and analytics. And in the ensuing years, I went on to run almost every business in the consumer bank. I started in Wealth, moved to run Lending (Mortgage, Personal Loans, Credit Cards). So I've done basically all the product sides. Plus Marketing and Analytics.
Eric	In the consumer space?
PAR16	Yes, all in the consumer space. The only job I haven't really done is in Sales. And Credit, directly. Although the Lending job gave me a lot of exposure to Credit. So that's my banking background. I'm an engineer by training. I've done the required statistics kind of courses. Although I must say that during my PhD, I found that I knew nothing about Statistics. My thesis was around quant only, because I was very lazy and wanted to fastest way to get my PhD. It was a PhD in Business Administration. So I learnt a lot of Statistics then. Because I was trying to do longitudinal analysis over a long period of time, using the Compustat database in the U.S. which is like a 150-year history. And just doing that. And in the process, learnt quite a bit about Stats. So that' my background.
Eric	So while in [multinational bank] where you ran or started the Analytics team, in your subsequent roles, did the Analytics team report directly into you? Or they supported you?
PAR16	They supported me. They didn't directly work for me. Either they were in a separate supporting unit, or they worked for someone who worked under me.
Eric	And currently as the head of the consumer business in ORG2, does the Analytics team report into you?
PAR16	The Analytics team reports in the head of Marketing. But the head of the Analytics team is in my leadership team.

Eric	Even though he's a 2-down.

PAR16	The membership of the leadership team is not just by rank. It's based on the expertise you bring. So he's one of those people, who despite not reporting directly to me, is in the leadership team because his input in some of the decisions we make is crucial. And it gives him the occasion to socialise with the other key stakeholders. And as I'm listening to your pre-amble to this interview, you can therefore cluster the issues and solutions into a few logical groups. One is obviously the preparation, crunching and formatting of the data in a way that is understandable. And that today we are in the process of doing complete DIY. Because the Analytics team today do a lot of work that today with proper organisation and infrastructure, you can expose directly to the end-user; make the end-user do self-help. And one of the feedback I got when I first joined was that getting data here was like a big secret. You had to sign all kinds of forms, and they'll give you the data and tell you it's very secret. I told them that that's rubbish. The data is useless because the senior people look at it and don't understand what it's all about.

Eric	Because there's no context?

PAR16	Yes. So I wanted the most junior person to have access to the data. So they are rolling it out using Qlikview. To empower across the entire bank. So all the Marketing, Product and Segment people will have access to this tool. So they can do their own targeting, sizing. They can look at different cross-tabs. And therefore eventually reduce the work of the Analytics team producing this data, which occupies a lot of their time today. And another big chunk of what this Analytics team does, whether you consider it as part of analytics or not, is Campaign work. Especially in banks, we run a lot of campaigns. So we are also automating those using a solution from IBM - schedule the campaigns to run regularly, setting it in the system. Because now you have to do a lot of preparatory work. Once you do that, then what's left is the Intelligence work. And as you rightly pointed out, it is not possible to do this Intelligence work from Chennai. Intelligence work can be done either through Deduction or Induction. The deduction method often fails. Because when you crunch it from basics and don't know much about the business, you will produce very obvious ideas that look sound to you, but when you have a business discussion, you will find out that things were already known and things were not considered. "We already know that, and we already know that the bottleneck is here. You don't know because you don't run the business and you don't understand where the bottlenecks are." A lot of it tends to be like that, from my experience.

Eric	You mentioned Chennai because of your [multinational bank] days?

PAR16	Because a lot of people are thinking of offshoring to India, or Malaysia, or whatever the case may be. This offshoring only works for what I deem to be the non-intelligent part of analytics - the preparation part. But to make sense of it [data], you need someone very close to the business. And the hypothesis method is always better. But to formulate hypotheses, you need the domain knowledge. To do from bottoms-up, looking for patterns purely from the data and finding the opportunities ... I think if the business was very immature and in a start-up mode, and people don't really know what's going

on, this bottoms-up approach may work. But in a matured market like Singapore, you can't do that as the business will tell they already know these 'patterns', and it's not interesting. I give you a simple example: if you hire someone fresh from the university and he does this bottoms-up data crunching, he may suggest that we create a program to reward customers with benefits for their patronage. But if I go to a certain partner-restaurant or partner-merchant and request that they support our program by providing some benefits, the merchant will not be interested. Instead, they are interested in the customers that the bank has but have yet to patronize the merchant. But what the bank wants is to impress the repeat customer, but the merchant is not interested. So the fresh graduate wouldn't know this, and you won't expect him to. This needs domain knowledge - you need to have worked in the field and have someone tell you off that they are not interested.

Eric   But wouldn't that be logical common sense - a sort of business game-theory?

PAR16   Possibly. You can find some people who are sharp enough to be able to discern. But there tends to be few of these people. And the quality here is to be able to put yourself in the shoes of the decision-maker and think like him. I have found this skill to be quite rare; such a person's decision-making prowess is much better. He will know that this is a potential problem. But even then, he will not know the second part of it - which is, we don't like to reward existing customers. Because in Banking, there is very little barrier to cannibalization. With Apple, you've bought and paid for the product. If you want the newer product, you pay some more. In Banking, you don't do that. Giving someone a better time deposit rate doesn't work; you suffer a loss in income. So even if you know A, it's harder for you to know B. Combined with the fact that there are not many people who possess these abilities ...

Eric   As a segue, you've clearly met some of these 'types' of people who possess these abilities …

PAR16   They usually end up with the line-of-business, because they are misfits for analytics …

Eric   But they didn't originally start out in the business right? They came through an analytics, data science or decision science route …

PAR16   Actually there's no pattern. They could come through any route. Because it's a competence, it's a strength; some kind of talent they have. So they could come from any area. But they generally end up in business, because it's about judgement. It's about being able to piece together the important drivers of decisions and make a very good call as to the probability that this concept would work. This is a very rare attribute.

Eric   Has it got to do with the fact that the person got the right exposure? Or seat at the table at some point?

PAR16   Exposure is a factor, but from my experience, it's only one of the factors. The other factor is intrinsic. It's the ability to take many different experiences and distil them into something that makes sense. And I found that the very first step is 'categorisation'. If you cannot categorise, you are unlikely to

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distil the complexity into something you can re-use. So the first skills that these people have is that they have a very strong ability to take something very complex, take a step back and say that, "in this complexity, there are only 3 things that are important." And I can cluster all of it into one of these 3 categories.

Eric   Do you mean framing?

PAR16   It's a precursor to framing. Framing is not possible if you cannot break it down into something simpler. Because you show the whole complex equation and people tune off. This is an intrinsic skill that these people have. The other skill is obviously pattern recognition. They can recognise that, "Hey, this pattern looks familiar and I've seen it somewhere else before. Now that I look at it, I know where that 'somewhere else' is, and I can draw that parallel, and I can extrapolate this pattern forward." So if you combine these 2 skills - the ability to categorise (and therefore frame), and the ability to spot patterns, and combine them, then you have ... And one more factor is the ability to be in someone else's shoes When you combine these 3 together, then you get a 'Yes'. It's all about probability in the end, because breakthroughs ... you can have a lot of ideas, but if the probability of success is very low, then you become a 'dreamer'. You walk around with all these ideas, but they never come to maturity because the probability of success is low in the first place. So people who can bring breakthroughs forward, they know that these things are long-shot and not worth doing. Or long-shot but such huge potential that maybe it's worth it. The majority of dreamers cannot fathom this. They cannot determine what is small and what is big, this is difficult, this is easy ... they get all caught up by the idea.

Eric   Let's back up a little bit. When you use the term 'Analytics', whether it's business intelligence or business analytics, what does that term encompass for you? Because you mentioned about the reporting piece which is analytics to some extent. The campaign execution piece is also an outcome of an analytical process. But in the space of analytics, what does that mean for you?

PAR16   There's upstream and downstream. Right upstream, you'll be making decision with data. And decisions would encompass initiatives, optimisation, pricing. There's a whole range of business decisions you can make with data. That's upstream. Now if you go downstream, it's the operationalisation of some of these concepts and ideas. So let's say we want to target all women under 20 - how do you operationalise it is also part of the responsibility of data analytics. That's the dirty, non-glamorous grunt work. But that's where money is made.

Eric   Eric proceeds to explain the construct of business problem translating to data problem, data problem translating to data solution, and data solution translating to business solution.

PAR16   Let me give you an example. What makes a good wealth model. Breaking that down further, what I mean is, what kind of customer portfolio should a relationship manager have so that his business is sustainable and not volatile. That's from the customer portfolio perspective. From the relationship manager perspective, can we identify certain things that the relationship

managers do that lead to high sustainable income. These are important because we can create indices. One index could be a measure of how good is your base of customer; how wide are the people who are generating income for you. It's almost like running your own business - how many customers do I have, how many are giving me income. For example, you may have 1000 customers but only 1 is sustaining the business with his income, and that is very high risk and not diversified. A lot of relationship managers do that. Out of 300 clients, they know 30 very well, and they 'milk' the 30. So there is an important metric around customer sustainability index. And it's very useful to know because we can then go the relationship manager and say, "business is not sustainable". The other dimension is about what the relationship managers do. For example, they only sell one type of product or they never call most of these clients and their coverage is poor. I can take these 2 indices and go to the average performer and explain to tell what the top performers are doing - high relationship manager index and high customer index, and I want you to replicate that. So this is the premise of the problem. But after months of looking at the data, we concluded that we have no such relationship managers. All our relationship managers 'milk' their customers and are now in trouble as markets are now very volatile. So for most of these complex business issues, I find ... other than if you are building scorecards ... because scorecard is very defined and is an optimisation solution ... whereas these are not optimisation problems but are unbounded problems. I'm asking you to find me a solution to this issue that I have, and you don't know what the boundaries are. In most of these cases, I find that the most common problem is data limitations. We just don't have the data to prove either for or against what we are saying. We inherently know that if a relationship manager sold to 70-80% of his customer base and he sold multiple products, he will be so much more sustainable. But the data doesn't exist and likely because no one practicing it. So I can't convince the relationship managers that this behaviour would be better for them. The relationship managers want quick and succinct answers, in one chart, instead of long stories.

Eric   In data science, this would be an uncertain problem. Initially it may have been an ambiguous problem, but once framed, you now know that you want to find people who do multi-product sales, say.

PAR16   Actually the initial problem statement was, "What do our best relationship managers do?" And how can we take what they do and replicate it with the rest. And the conclusion is that we don't know what our best relationship managers do. Looks like all of them are just 'milking' customers. So we have no ideal profile, or the ideal profile cannot be so simply stated; it's not clear. But after trying, there is no obvious way, and why this is very important, is because in this part of the business, the scale is very skewed. It's not a bell-curve. We have a few people who do very well, and everybody else who don't. So if you could just replicate the behaviour of the top performers, just doubling the % of top performers, you won't need to come to the office anymore [i.e. hitting your numbers already]. Because the top performers generate so much profit. Of the 90% who are not top performers, you can say that maybe 30% are above average, but everybody doesn't meet their numbers. It's quite common, especially now when the market is so difficult. So that was the original problem statement - tell me what our best

relationship managers do, and how can I replicate their success formula across the other 90%.

Eric   And this was a problem statement that was posed to your Analytics team? And how did they arrive at this frame of the 2 indices?

PAR16   When you give the Analytics team something so broad, they will tell you they don't understand. "I don't know what you want." They will first of all look at the sales activities and find nothing. So we do it iteratively - looking at breadth and looking at depth, and we continue drilling down until you come to some kind of conclusion.

Eric   But initially there was no hypothesis. You stated an observed phenomenon. But you have not crafted out what the underlying drivers may be.

PAR16   So often you have to give the analytics person the hypothesis.

Eric   Your experience is that the Analytics team is not able to develop the hypothesis?

PAR16   Usually they can't. And already our current Analytics head has worked in the business and gain that exposure and domain knowledge and came back to Analytics. He can at least appreciate where the hypothesis is coming from. So that's already quite rare, given there are not many who started out in analytics, went to the business, and then came back to analytics. There's also very few the other way around. Because no matter how you pitch it, the heroes in the bank are the product and sales team, not the analytics team. I read a book that says, if you want to know what job to be in, you go into any company and ask them who their heroes are. If there is a success celebration, who is standing up there on the stage? If you want to be recognised, you take those jobs!

Eric   Let's come back to the construct of business problem to data problem. In this particular example, you had to do it iteratively. You had to help them put the hypothesis together. Are there organisational mechanisms that can aid this process? For example, you have weekly or monthly meetings, the Analytics team has a seat at the table so that they have background and context to the problem, or you have some kind of governance council that facilitates knowledge sharing, so that the analytics team can translate the ambiguity in the problem statement into something like a hypothesis, and then sharpen it from there?

PAR16   I find that it's very hard for an analyst in a matured consumer banking business to carry that out. Because he's got a lot of business-as-usual stuff going on, and there are a lot of different businesses to support, each one very different. The consumer bank is a collection of very different businesses. Cards is very different from Wealth, Deposit is very different from Cards, Lending/Mortgage is more akin to Deposit but different from Wealth. So no one is likely to possess such business domain skills across the board; to have that kind of depth. Secondly, because he's got a lot of this BAU stuff going on, he needs to worry about stuff whether the campaign batch job runs on time. So to rely on this individual to be the one and only key individual to come up with all these things [hypothesis] is not feasible. There could be

some important things where this individual is driving. For example, in the next 10 years, the number of people visiting the branches is going to reduce by half. Anyone who is a new and important banking customer is not likely going to visit the branch. So to be good at Wealth, we need to be good at having digital conversations. The nature of digital is that one-way and most of the internet work on buying and not selling. How does someone sell to you on the internet? They can't really, right? You want the product, and they are just throwing offers at you and you are clicking through which offers are best. So for digital, we are going into trigger-based. So for the young professional category, we are pairing them with Personal Financial Management team. PFM works for those who don't save enough. In Asia, by the time you reach a certain age, you would have too many bank accounts, and PFM would be too primitive. So we pick the young professionals for PFM where you have only a few bank accounts, and you are probably spending more than you are saving. So giving you tips on how to spend less, save more, and yet enjoy your life, is very meaningful. So there, we look for triggers. And it's a complex thing because you need to combine the feedback stimulus and the analytics. So let's say you spent $100 last month in coffee joints. Now you are at $75 and I trigger an offer to ask you if you would like to spend $80. So the threading of the analytics, the stimulus and the feedback results in a digital conversation to try to mirror it - not quite 2-way, but not quite 1-way either. It's a little bit in-between right now, like 1.5. This is where the Analytics head would be directly involved. But if we have a problem in Wealth where we want to target XYZ, we probably won't go to him.

PAR16   Right now, I'm having a conversation with my Head of Insurance Specialist Sales on how we would segment and provide solutions for dependents from the affluent group. So we are segmenting it based on the age of the customer, and the mid-point is around 50: 50+ with at least $1 million or 50- with less than $1 million. And the other axis is when he is expecting to realise the benefits of his insurance policy. We end up with 4 quadrants - one of them is around the children's goals, children's education. The other quadrant is on inter-generation wealth transfer, because you expect to get the insurance benefits in 30-years' time, etc. So these are the segments. And when the relationship manager picks up the phone, all I want him to do is make an appointment, because the relationship manager doesn't sell in this case. So the problem statement is this: how to have a proper conversation with the customer without him hanging up, because the customer, on hearing that it's about insurance, will say that he has enough and won't want to continue the conversation. So, how do you have the conversation to lead to this solution set to convince him that he has this need and at least just come for an appointment.

PAR16   When you peel down, you have to segment. For example, who has children - because if you don't have children, the conversation is very different. So how can you find out who has children. I cannot go direct to my Analytics head directly for this. It's too much. This will have to go first to the Segment and Product people. In fact, I just had a meeting with my Segment and Product guys and I told them that I wanted 25,000 customer names, and I want to know who has children and what are their ages. So that on the birthday of the child, I can send a card, email or a call, to wish them and ask them if they have thought of his child's potential and how much money he wants to set

aside for him, etc. I think on that day, when you receive this call, it will be a lot more meaningful compared to the other 364 days of the year. Because today is his birthday, you can see the child's potential and what you want him to be. And maybe you want him to do things that you never had the opportunity to do. So the first thing I want the Segment and Product team to do is get the data. So they need to run a campaign, and the best thing to do is to give free travel insurance to the family, because then you get the child's name and demographics. Once you have that data, then you can begin to design the engagement and conversation. But in this case, analytics is quite far back. They can take the 25,000 names when it becomes available and operationalise it. So that is something I won't involve the Analytics head from day one. Because he will go bananas. And there's so many of these things in the business. In a large consumer bank like ORG2, it's impossible for him to get involved.

Eric   So let's take this insurance example. You want to find the point at which to have a meaningful conversation with the customer. The birthday suggestion seems like an intuitive and logical one, but it is nonetheless, a hypothesis. But in the way that you've explained about getting the data, it is something that you will ask the campaign team to execute?

PAR16   Operationalise.

Eric   Would it not make sense, even though the Analytics team is not involved in the initial hypothesis generation, for them to support it by thinking through how to collect the right data to validate the hypothesis, at least some type of A/B testing, and then sharpen the hypothesis. So as the Analytic team executes the campaign, the campaign is in essence, an experiment to validate the hypothesis.

PAR16   We have dynamic ability to serve you different content when you log in. That will be one very good way to use this capability. We can then report that of the 100,000 people who logged into internet banking last week, we served these types of content, in batches of 10,000. And these ones had these successes. So now we are going to do this; we are going to tweak this and that. That part of it I agree with you. And that's why this is part of the digital conversations workgroup of which PAR2 (Analytics head) is there. But this particular one, he will not be very helpful because ... yes, you can say how do you prove if the hypothesis is right, but here, you use common sense. If you get the analytics team involved, there is not much they can prove. You have to actually call the customer on the child's birthday ...

Eric   But you can test the sales script …

PAR16   They are not the best people to do the sales script. They don't have the domain knowledge. Most of them don't have the domain knowledge. I think it's a nirvana, and this industry preaches a lot of nirvana because the analytics and consulting vendors talk that. Even in the area of Fintech, there's a lot of Nirvana going on; some of it doesn't make sense; it will never happen.

Eric   Big data is not a panacea for everything.

PAR16   Correct. So when you look at it practically, there are some very obvious ones to get the analytics team involved. But there are some where the analytics team is quite far down the food-chain. Even my product person has a problem. I told him, "why are you showing me you are going to collect 866 names? I'm not interested. Give me 25,000 names or else we don't do it." We are at that basic level of discussion! And these people are already in products and segments. If you take this to the analytics team, it would be beyond them. Maybe it's also a function of scale. In Asia you don't have enough scale. I can see that if you are head of analytics for JP Morgan or Wells Fargo, maybe it would work. Because you have scale and managing a business that is 100x bigger than ORG2. ORG2 is already very big in Singapore, but this is 100x bigger. I can imagine that this scale will allow you this kind of capability. Because maybe then your analytics team is 1000 people, and therefore it makes sense. And conditions in the US are that they do dynamic real-time pricing. But here, we are quite stupid, we compete until there's nothing left. It's already zero. There's nothing left to give. So that's also a factor; you don't have much room. So I would not rule out that in a much bigger organisation, in an advance country, you could have that kind of specialisation. So you could have a head of analytics for Wealth Management, and I would then be having a conversation with him regarding the insurance example. The insurance initiative originally came from the fact that privilege banking customers don't buy insurance anymore. Because if they are wealthy, they don't need any more insurance. Because buying insurance is to reduce your uncertainty and prepare for eventuality. But if they have enough money to cover their family and live in comfort, they won't need insurance. So instead, they should buy insurance for their children. So that's where it came from initially - I'm widening the pool. And this pool is huge as most Asian parents want to do something for their children. But as we drill into it, we realise we don't have the necessary supporting data. So it's hard to generalise. It's very specific to the type of issue you are dealing with to decide who gets involved, and when the analytics are activated.

Eric   I agree with you that you won't be able to find the person with the ability to see across the bank, across different product lines. In many of the banks, they have vertical teams dedicated to different lines-of-business.

PAR16   The bigger banks tend to do that. The global and regional banks tend to do that; they want to have centres of excellence, so they create these horizontals and verticals. But I guess for a regional bank that is dominant in Singapore, we don't really have that; we're not at that size. If I take [multinational bank], then yes, they tend to have that centre of excellence. But I think the jury's out. There are a few cases where they are adding great value, but what in experience, it's usually not. You can say that it's very person-dependent - you ask yourself how many people have gone from analytics to business and back? If it's very few, then it's more likely that you will receive rubbish rather than things that make sense ... more of the time. That is not to say that you won't find one person that bucks the trend. But in general, you find that analytics is not effective. "You are telling me things that I already know, And I'm wasting my time educating you." And in a global bank, there's too many people to educate, because they want their control systems, they want their centres of excellence. So the whole global model breaks down. It still works for wholesale bank, because wholesale banking is essentially a global

business; every CFO behaves the same. In Consumer, they don't behave the same.

Eric   So you feel that ORG2 doesn't have the scale to support the verticals/horizontals?

PAR16   At present it doesn't. We take the practical approach. In Cards, which is the key consumer line, where we have a lot of grunt stuff, we have a dedicated face-off analytics person. For the rest of the line-of-business, it's not so defined. In the Cards review, the cards analytics person is there. In my monthly review, the cards analytics person is there. But the wealth analytics person is not there.

Eric   But that's ORG2 choice to either create or not create those roles, right?

PAR16   But then the balance is cost and size versus practicality. Because all consumer banks are under pressure. If you look at Singapore in particular, the balance sheet has been destroyed by the government and ORG4. The ability of the balance sheet to produce income is incapacitated. Then future growth is going to come from expensive businesses like Wealth and Cards. In Cards, you spend so much on marketing, paying Visa/MasterCard, and rewards. So the cost-to-income in the Wealth business is 60% while the cost-to-income in the Mortgage business is 20%. If I replace every dollar of Mortgage lost through regulation and stupid pricing by ORG4, it would be about 40% already. So banks are now very conscious - do we really need this [analytics] structure? What value is it going to add? If it's going to add tremendous value, then of course we would do it. But if we are not sure, then let's err on the side of practicality. And therefore, the model that we have no choice but to gravitate to, is that the business heads all need data and technology backgrounds. And that's where most banks fail, because today, banking has become a technology business that deals with finance. But most of the CEO one-downs will say that they know nothing about this - "I'm not a techie." You don't see the one-down to Mark Zuckerberg saying that. But in fact, everything we do is a 'digit' somewhere. So I think the future banker needs to, it's compulsory, understand data and technology. It's critical. And the banks that institutionalise this would be the winners in the next decade of competition. And the banks that don't, which is the majority of banks ... look at the top leadership, none of them know anything about technology. Therefore, they either under-estimate or over-estimate what it can do, most of the time.

Eric   Therefore, what you are suggesting is to 'democratise' the analytical approach, so that you don't need an analytics team … or do you still need it?

PAR16   You don't need an analytics team to be the one-all-and-be-all. All the business heads know how to hypothesise and find the opportunities, and distil the hypotheses. And then go to the analytics partner and say, "These are the hypotheses. Help me prove or disprove it." "For all these unbounded problems, let me sit with you and work out how to bound it a little bit more, so that it's practical before we start working on it." So, it is not going to be one unit, it will have to spread across all the Consumer CEO one-downs. And today unfortunately, that capability is weak. Because traditionally in

	Banking, you hire people from Finance and Business Administration who may not necessarily possess these skills.
Eric	Knowing what you know now … you started in Marketing and running an analytics team … what would you have done differently? If you could have gone back … because you had the opportunity to sort-of create the analytics capability (in [multinational bank]) … what would you have done differently?
PAR16	(Long pause)
Eric	Structurally or talent-wise, or even from a decision rights perspective?
PAR16	The investment required to lift the engagement from just very basic - bombarding the customer with marketing, to engaging the customer in a conversation, should have come earlier. I think most banks are behind. Because if they do it, it's coming from the technology person, it's coming from the data person, and it's not coming from the business person. And in those cases, it almost always doesn't work, because the business is not involved, and they are thinking that it's some useless thing. But in fact, going forward, I think it's going to be very powerful because of the fact that definitely in the 25-year horizon, there will be very little need for branches; and this is a long gestation. In banking, it's about demographics, and so there is a long gestation. It's not like you switch from one social media platform to another in a span of 3 years, or switching mobile phones, where the technology change is so fast. This whole thing about putting together the platform so that you can digitally engage the customer ... there is a benefit in digital engagement that you cannot get from physical because you can close-loop and monitor the whole thing and be scientific about it ... whereas what the relationship managers do is quite a mystery; we have problems tracking because they refuse to key in. I think that part should have invested earlier. ORG2 is beginning to do that but I think because of the issues that [multinational bank] was happening, we couldn't really concentrate on it to be fair. I think locally, the only bank that has made headway here is ORG1. And yet, they are still doing it in a bit more of a marketing way. That's why I use the word 'digital conversation', I don't see it as marketing. It's the whole thing about how you sell. And it's more around Wealth, but certainly can be applied to Cards. Because in Banking, if you distil it down to the basics, what is it that you really do is you have conversations with people, and then you make them sign a lot of documentation and paper, and then you change the digits in the computer. When you distil all of it, there's only 3 things you do, at the basic level. Therefore, if you think about the competency you need, is to have people who can have very good conversations that you make you sit back and think, "Wow, if only I had this person as my relationship manager!" "Look at the professionalism, the competence, and the insights he can deliver!"
PAR16	Number 2 is you need business process re-engineering because there's too many things on paper, and too many things we need to sign and redundant information we need to supply. And the 3rd one is that you need to build systems that are very flexible, so that we can change very quickly. In essence, these are the only 3 things we do! Of course you then ring-fence it

with all the risk management and all that sort of things, and that makes the picture fuller, but fundamentally, you only do these 3 things.

Eric   One last questions. Coming back to "business problem to data problem, data problem to data solution, and data solution to business solution", typically, many organisations fall down in that final leg where data solution translates to a business solution. They build a model but it's not practical, or it cannot be executed on the timing that they want, or when they run it, it doesn't generate enough leads, and such challenges. And so, this is at the interface where the analytics person having that sense as to whether the data solution translates well to implement. In your experience of both running the analytics team and working with them, do you see the analytics team falling down here, and what's causing them not to see that full picture?

PAR16   I see 2 big drivers there. Because banks have mis-behaved, the regulators now want to monitor banks much more tightly, and in the past, banks have difficulty giving the regulators the granularity of the data they want. So what has resulted therefore, is that there are a lot of data projects to know put everything online. What's driving this is because the banks can't report properly. But the benefit that is going to result from this is that a lot more things will be available 'on-tap'. And this is going to allow us to keep longer histories, have much better longitudinal data to study. Consider: the main credit card holder generates double the profit. But in a mature business, even if you are very successful, out of 10 customers you have, only 3 are main card holders. So the question is, how does a main card holder deteriorate into a secondary card holder, and how does a secondary card holder promote to be a main card holder? How do you analyse this? In fact, I've not gotten the answers to these questions. Because some of the longitudinal data is not there; we don't keep enough history. So some of these issues will be solved by these data projects, which are being driven from Finance because of reporting issues. So I think this trend will allow banks to analyse a lot better. Because of the data-richness and the period of availability will be much better. The other driver has to do with more in terms of how you manage IT projects. It's hard to distil this, or I haven't found a way to distil this to articulate it in a simple way, but the key elements are: (1) what is the minimum viable solution, rather than the maximum solution, and (2) how can you rapidly evolve from there. Because a lot of bank projects still take the traditional approach - let's define all the specifications, then you take 1.5 years to do it, at which time, all the specifications have changed. And therefore in many areas, we are moving towards, "Let's just do the minimum," and we know it will pay back on just this minimum, everything else will be a bonus. Let's do that but let's have the flexibility to make quick changes. So we don't have the solution in data science. For example in Mobile, we use Agile method. And so we don't have these dependencies where we try to do everything and then the business says, "We don't want this anymore."

Eric   Just keep bolting on what you need.

PAR16   Because things are so dynamic and things are changing all the time. So one aspect is around this minimum viable solution and the agility around it, so that you don't have this $200 million project that fail. I think the importance of this close-loop, digital conversation, the stimulus, and the mobile phone

will be an important aspect there. Because in the past, it was impossible to give people the direct feedback to any task, even if you logged in once a month. Now the person carries the super computer (mobile phone) with him everywhere, and he's always logged in. So you have this closed-loop ability. If you combine that with automated campaigns, with segmentation, the right stimulus, the right conversation, I think you have something very powerful there. These are the 3 big things I see that will change the way we use data. A lot more history, a lot more of anything you want will be out there in very cheap data storage because the regulator is driving it from a reporting perspective. We have to be more flexible, and we have to get better at defining minimum rather than maximum; the business is not very used to that, because again, there are very few people who are technologically savvy. As far as the business is concerned, they say, "We've given you everything and yet you are so slow!", not knowing that when I give you everything, you become slower.

Eric   Because to define minimum suggest you have a very intimate understanding of co-dependencies.

PAR16   I was just telling our CEO, that to be agile, you need to know what is minimum. To do what's minimum is a much harder task than dumping everything, and saying this everything I want.

Eric   Yes, it's a lot of critical thinking that's required.

PAR16   And then this final piece on how you do this complete closed-loop digital conversation. Now all the elements are in place; the technologies are quite mature. And you can piece them together and do something that is kind-of '1.5'. So I think these 3 things are probably things to watch out for going forward.

Eric   Eric thanked PAR16 for this time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections.

Participant Code	PAR17
Title	Senior EVP and Chairman
Organisation Code	ORG7
Date	June 15, 2016
Legend	[xxx] implies redacted due to participant confidentiality

Person	Transcription
Eric	Eric thanked PAR17 for taking time off from his busy schedule to participate in this interview and explained the BI&A organisation research he's conducting.
Eric	Could you share a little about yourself and your work experience?
PAR17	I am a business manager who knows how to code but not quite a quant. I'm a coder, I grew up coding. I'm a Physics major. I ran a quant team. I would throw stuff at them [business problems]; some of them have PhDs from Cal Tech, and with expertise in options pricing and so on. It starts with business managers who appreciate the value of being exact - business managers who can differentiate between 'bullshit' from 'gut' from 'real facts'. Whenever my subordinates give me their opinions, I will always rely on the person with the most experience. I have a rule, "I do not trust statistics if I have real-life data." And oftentimes, there is real-life data. In the discipline of Markets, there is VAR calculations and there's stress-test. That to me is the equivalent. Absent that, I'll rely on statistical data. But beyond that, we need to be predicative, and that's where the problem starts. We need to go through the various stages of data, from diagnostics to predictive and prescriptive, the 'textbook' approach. But I only trust analytics if it is able to explain the 'now' or the 'history'. Or at least show where the correlations are without necessarily explaining causality. When somebody is able to get very granular, I get more comfortable. Because many of the decisions we make now require a lot of infrastructure build-up, logistical build-up, training and so on. They cost a lot of money and resources. So I have to be sure. And the only way I can be sure is through data. Without data, I am very uncomfortable. When there's an absence of data, I can experiment. And when I start experimenting, I start gathering data. So if there's no data, I will get my own data through experimentation and stimulus. I do it for the sole reason of testing and data gathering. So it starts with business managers who are not necessarily mathematical, but managers who don't believe unless you prove it to them.
Eric	And that's what I'm trying to get out of my research. The problem with organisational designs of analytics functions is that it may not address the issue of ambiguity or equivocality. The genesis of analytics comes out of IT, and IT looks at their domain from a lens of standardisation, uniformity, scaling, outsourcing, offshoring. But the reality of Analytics is that the work is not certain. People tend to think that data is all you need, but in reality, the data requires interpretation. And no 2 analysts interpret the data the same way. No 2 analysts interpret the problem statement the same way. And it's possible that the ambiguity and equivocality in Analytics is what's causing many Analytics function to be unsuccessful, because they end up not being able to solve the real problems.

PAR17   The problem is that this is not Physics. There is no E=MC square here. The solution depends on pockets of problems that you need to fix. There is no single formula. The formula is different for each customer segment for example. The problem starts when people look for one single thing - when you have an engineer who has no business domain knowledge, who has never marketed, who has never sold anything in his life, then you have a problem. But when you have people who realise that you cannot be the same to everyone and every single customer segment, that's when you say, "It's not ambiguity. What is clear to segment A may not be clear or relevant to segment B." We are not seeking clarity, but rather customisation. It's not even binary, but it's an approximation to the nearest single customer. In Banking, we try to approximate this by saying that there are generally 6 different types of customers. We personify these segments by giving them a name. By doing so, we get as close as we can potentially to understanding their behaviours. And the other problem is that we look for cause-and-effects. It doesn't have to be that way. Just because somebody goes to the casino on a regular basis and have good credit rating ... I think there was such a study ... you don't have to explain why that is. The problem starts when you start trying to explain; you don't have to explain. The person who goes to the casino and is able to settle his debts, otherwise he'll get 'roughed up', is the explanation that people give. But I don't really believe that. You don't have to explain. So my 3 answers to you is: (1) you don't have to explain. And (2) what is correct for someone or a segment, doesn't have to be the same for everyone. And (3), you just have to experiment when in doubt, just like what the casino Harrods did. There's no right or wrong; just try. And in trying, you have optionality. When you try, you may realise that you are partially wrong and so you correct for it. You keep correcting and keep correcting. And hopefully you get it more right than wrong. Just keep adjusting. Innovation is about that. You need business managers to think that way. It's not 100% science. Even quantitative analysis requires you to make estimates ... it's still a guess. At the end of the day, the person who is going to tell you if you are right or wrong is the customer. And if the customer doesn't like you shade of red, he will tell you. But if you ask him to describe the shade of red that he likes, he surely wouldn't know; he needs to see it on the wall to give his feedback.

Eric   Problems start out in the following ways: a business stakeholders comes to the analyst. The business problem needs to be translated to a data problem.

PAR17   Yes!

Eric   The data problem then needs to be translated into a data solution.

PAR17   Yes!

Eric   And the data solution finally needs to be re-translated back into a business solution.

PAR17   Yes!

Eric   And so it goes through this process chain. Now at each of the stages there is ambiguity and confusion, and sense-making that needs to happen. Most of the time, the challenge is in translating the business problem into a data

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problem, and because the analyst is not able to do that well, he doesn't gain the respect and credibility within the organisation. There are those that argue that the Analytics function itself needs to have a seat at the table, and they may need to have some decision rights. Or there is a need for close proximity, so that the analysts can infuse into themselves the domain knowledge of the business stakeholders. Because when a business stakeholder tells an analyst a problem, they never really give the full context of the problem, so the analysts have to make sense of it, and if they are close to the business, they sort of get it. And in this argument, if you now take the Analytics team and offshore it ... everyone's looking to do this in China and India because of the availability of resources, but I haven't heard a lot of success cases. They've been able to reduce the cost of the Analytics function, but many have not been able to increase the capability or analytical prowess of their functions. And it's likely because of the proximity issue, where the business problem doesn't get translated well into a data problem, and everything subsequently sort of breaks down. And so let's focus on this front end of translating the business problem into a data problem. In your experience, and PAR18 [Analytics head for the bank] has a seat at the table ...

PAR17   Yes she does.

Eric   But if PAR18 didn't have a seat at the table, or in other organisations that you are aware of … prior to PAR18 coming, Analytics may not have had a seat at the table …

PAR17   I thought about that. I have a thrift bank that is based in Cebu, and PAR18 is going to be on video with the business people in Cebu on a regular basis. They meet every now and then so that they know the personalities. The thrift bank (City Savings Bank) is headquartered in Cebu while PAR18 and her quants are in Manila. So it's actually the same as offshoring. The good thing is that there are a lot of conversations, and many of those conversations are via video. So you can actually see each other. It's different if the exchange just on email because a huge part of communication is tone and body language, etc. which gets missed out if it's not on video. There's no real conversation on email. A lot of the info is missing. Seat at the table through video is ok as long as they know each other. The important thing is to have PAR18 in close contact with the business; the rest of her team can be somewhere else. The same problem exists in IT - there needs to be an equivalent of a system analyst who does the translation of the business requirements to the system engineers and programmers. The system analyst role has now evolved into a project management office or project planning office. As long as that role is there, the rest of the guys can be somewhere else. Many of my programmers are in Cebu but the head of the team is always in Manila, and knows exactly what the problems are.

PAR17   It's also really important to have one success at the start. PAR18 gained her seat on everyone's table by doing a project that worked right away. I'm a believer, but many of my colleagues didn't have faith in quants. But they now believe in it because PAR18 showed success early. People don't like taking leaps of faith but when they see miracles happen. So beyond just organisational arrangements, there must be that 'walking on water' episode to get everyone to believe. Business managers invest in analytics based on

emotions - no different from buying clothes - you can't explain it, but you like it and choose it. So once the business sees the success, they lower their defences, and they call came knocking on PAR18's door. They over-inform her on their needs. And that's when she can choose what projects to work on based on her assessment of value and impact. To summarise, interaction is important because communication is key to analytics - most people have problems verbalising their problems let alone to provide a good description. And the way to do it is for PAR18 to have a real personal relationship with the business. Even if it's offshore, it can be done. So long as they can see each other. But the 'walking on water' must happen. Because once it happens, it builds more than trust. Once people have faith in analytics, they start coming and over-informing.

Eric   What if PAR18 was based in Cebu while you are based in Manila?

PAR17   Once she 'walks on water', it won't matter. Because people will still over-inform.

Eric   But could PAR18 have 'walked on water' if she had started originally out of Cebu?

PAR17   It would have been harder. You need to see 'Jesus in front of you when he's walking on water'. (Laughs). You can't see it on video. The confidence comes from seeing the person right across you. So she would have to come to Manila to do it, but after that, she could go back to Cebu. But she will still need to be physically present during the business reviews. During the business reviews, the business managers get challenged by everyone else, from boss, peers and underlings, and it's important to be able to see their body language. PAR18 has to be there during the discussions. She has to be there during reputation updates. She has to be there during customer ratings discussions. She has to be there and she has to have all those information. At least she has the full information and she can tell you what the priorities are. Most business managers don't necessarily know what their business problems are. The best part is when the analyst get to state what the possible opportunities are. Sometimes I miss the opportunities and PAR18 directs me to it, because she's 'walked on water' before and has my ears. And that only happens when PAR18 listens when the discussion is on-going. Sometimes people would ask her what she thought about a problem, and she would reply that based on her experience of having worked on something similar before ... That's when the value comes.

Eric   So essentially, PAR18 needs to be in that 'cross-hairs' or 'sphere' of conversation that's going on, without which, it would be difficult for her.

PAR17   Yes, she has to be there. Analytics is becoming to be more and more a direct report to the CEO. It's no longer a staff function. We don't even ask anymore whether PAR18 has a seat; she has. In organisations where Analytics don't have a seat, it's because they haven't been able to perform 'magic' and there are no believers. PAR18 is the third Analytics head in our bank. The Analytics heads before were shunned. They were like crazy people. So when PAR18 joined us, the senior managers were sceptical.

Eric	So PAR18 translates the business problem into a data problem, given that she's in the sphere of influence and conversation. And so she works with her analytics team to translate the data problem into a data solution. Do you as a business stakeholder tell her the sort of data solution that you require? For example, "I would like you to build the model this way. I would like you to segment the customers this way." Do you prescribe the solutions or do you leave it to her, and you feel she has a sense to articulate what the data solution should look like?
PAR17	It's not a one-time thing but rather iterative. For example, we were working on an initiative to give loans to overseas Filipino workers. We didn't know how much data we had. I told PAR18 what I wanted to make happen, and she told me that she would work on the data and see what we could get, what we could figure out. She came back and gave me this fancy and really great analytics, to show for starters at least what data we had to work on. And that gave me a reality check. Once I know how much information I had, I then told them to start investing in getting more data through experiments. PAR18 then advised me on how best to approach this. And so we have this iterative conversation; she tells me what's possible and for me, I want to extract as much value in the shortest period of time. The more certainty I think I have, the more I'm willing to take a risk on the execution idea. So the analytics folks give me a reality check and it helps me to scale back my ambitions, and start experimenting. So I feel more comfortable since it is way better than a guess. It's a very informed decision. It's more calculated and we could manage our risk-returns.
Eric	And so PAR18 simulates scenarios for you? And then together with the business stakeholders, you mutually converge on what the solution should look like?
PAR17	Yes, yes. That is what happens. We iterate. We have to discuss several times. The initiative that I mentioned earlier, we've been working on it iteratively for the last 2 months. And now we have a third person looking at it; she's new to the team. And we agree to get convergence before we show it to the downstream stakeholders. It's some form of art, well not really ...
Eric	It's informed intuition?
PAR17	Well, I have intuition, but I wouldn't go with it unless I have data. Because sometimes it's wrong. And it can be very wrong. But we are experienced business people, and PAR18 has done this before. Our risk is probably quite narrow.
Eric	OK, so I understand the need for simulation and iteration. Now, you mentioned that PAR18 is the third Analytics head for your bank. Were the other two not successful because they couldn't do these activities? They couldn't translate a business problem into a data problem? Or they couldn't do this iterative simulation stuff?
PAR17	The previous Analytics heads were from Consumer Risks backgrounds. I never met the first. But the second one worked with Freddie Mac [Federal Home Loan Mortgage Corporation] in the U.S. He had all these fancy charts, but he wasn't a real Decision Management person. He tried to explain every

single problem, and that was the problem. And he didn't have to. He was incompetent to start with. And that is why he failed. And he was also a bit of an ass. PAR18 is such a nice person. You see, the analytics person, by definition is a nerd, but has to have good listening skills. Even if you think you're right, you listen. Because the business managers all think they know what they are talking about. And to gain their trust, you have to listen. Then people become more and more comfortable with you. PAR18 is not an ass, and that helps.

Eric   Eric thanked PAR17 for his time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections.

Person	**Transcription**
Eric	Eric thanked PAR18 for her time to participate in this interview and explained the background and context of the research he's pursuing.
Eric	So you've worked across a number of organisation, and you are now very senior in your bank. From your experience, do you agree that there is ambiguity or conflicting interpretation of a business problem, and how can it be addressed in the organisation design or in the interface design, within the team and with the business.
PAR18	Yes, there is ambiguity. In our bank, Analytics is new. All they know is the buzz words like big data and scorecards.
Eric	Sorry to interrupt, but when you say that Analytics is new for the bank, I understand that you are in fact the third Analytics head for the bank.
PAR18	I don't really know the background of the previous Analytics heads. But when I came, there was no analytics team at all. I really started it from ground up. There was no one doing analytics. They were just doing Reporting. Even for Risk Management, they were just doing Reporting. But when I was having a conversation with someone in the bank, they said, "Yes, we know Analytics. You're the third person. And it failed before." It's short of saying that I'm going to fail too! But nobody gave me a full background on what went on before. I got bits and pieces and I think it failed because of objections from top management. Maybe it was harder for the person to convince top management to do things differently. I think it was just one person and there was no team, and I don't know what that person was doing. So it's not like I picked up from someone and continued building the team. No, it was nothing like that. When I started, no one told me what I needed to do. So I was the one who designed Analytics and how it should work, and what we are going to solve. Based on our background, I know I'm there to bring revenue, and to bring efficiency. So I designed the function in that way. In the beginning it was hard because I needed to understand how the business worked, who are the players in the business, and how I'm going to get the information, and what are the tools. I didn't have any of that. The other thing was the mindset. They believed that Analytics was Big Data, and as long as they had [predictive] scorecards, it's going to work and solve everything. So the first thing I did was focus on education and proving that Analytics would work.
PAR18	So I know I had to come up with something in the beginning so that they would believe me. So the challenge is, how do you build a function while in parallel work on something that brings immediate value. So I put together a proposal - I was at a business review which I wasn't supposed to be a part of, and someone was presenting, and someone in the audience criticise that the presentation was 'motherhood statements' and wanted to see some data as to what's really happening. So I interrupted and asked if I could show them

some of the stuff I had been working on. And so I interrupted the presentation and showed them numbers. It's like telling a story - this is the portfolio, this is us versus the industry, and this is the opportunity. And I heard that when I was presenting, some of the people who were unfamiliar with analytics said that my ideas would not be approved, that it would not work. There was scepticism, "Oh, we've done that before." You must understand that the bank was traditionally focused on Corporate Banking and wasn't too familiar with Consumer Banking. That's why they are very new at this. So I made several presentations to my proposal and luckily for me, it worked, and the results were better than forecasted. So they started believing, started understanding the value of analytics.

Eric   When you did that first proposal, was it based on your experience?

PAR18   Yes.

Eric   Because you knew little about the bank. But at least from the data that you saw, you recognised that this was an opportunity. It was obvious and you didn't need to get too much background and context. And you knew you could get value quickly.

PAR18   Yes, based on my experience, I knew it was going to work. So it was a matter of convincing them to believe in me.

Eric   Having built that success story, with the different business problems that exist across the bank, and while you have the experience and see and recognised the context of the problem, you are only one person. How do you get your team to also be able to translate the business problems into data problems? How do you create an organisational design of your Analytics team to enable that?

PAR18   I'm still working through that because my team is new. I started in August 2015. 3 people joined my team in December. I will have 11 people in the team including myself and new hire. They are mostly new …

Eric   They are new to analytics?

PAR18   Because analytics in a lot of places is 'reporting' and someone interpreting the information. It's not using data and analytics to solve problems. So it's traditionally 'reporting' and 'campaigns' and not really analytics. And so I have to train the team to think analytics. And I didn't want my analytics team to be mistaken for an operations and reporting team. So whenever a business person comes to my team to request for us to fulfil some task that IT cannot do, I would say 'no'. Because once you say 'yes', it compromises the team. Our competence is not on extracting data or doing fulfilment. Our competence is doing analytics. But our analytics is from beginning to execution. And how do I make this work? I'm currently the face of the team. Everyone will come to me and it's not sustainable; I cannot scale up. For me to enable my team, I'm slowly withdrawing myself from some of the meetings. My team needs to get used to me not being in the room, because once I'm there, I'm going to speed up the conversation. So that's what I'm doing - I'm letting my direct report lead.

Eric	How do you decide how to design those direct report roles?
PAR18	It's also based on what we've done in the past in ORG3. What do we need for an analytics team? We need data, we need infrastructure. So I have an infrastructure team so that I can access the system, get the data that I want and also fix the plumbing. So if I have to implement something, I want a team that can do that.
Eric	By creating this infrastructure team, would you not be self-fulfilling having a proxy IT team, something which you don't want to be seen as?
PAR18	Yes, it's a proxy IT, but it's for my team. It's not meant for external. When I interview these people, they also want to learn analytics. So the infrastructure team is also doing analytics.
Eric	So you've designed this infrastructure team to support your internal analytics team and not the bank.
PAR18	That's correct. And the infrastructure team is where campaigns happen also. Because there's so many fragmented systems across the bank. And we don't have single customer ID. So the infrastructure team is working on solving these problems with the external IT team.
Eric	So the infrastructure team's interface is with IT and not with business?
PAR18	There can also be business interface on the campaign side. Because campaigns sit within infrastructure.
Eric	So the business can come to them directly to request for campaign list extraction or campaign design?
PAR18	Well, the design of the campaign would start with the analytics team. It will only go to the campaign team when we are on a roll-out mode. It starts with analytics to identify who we should target. The analytics team will be the first one to do the waterfall, but the implementation will eventually go the campaign/infrastructure team.
Eric	Do things get lost in translation?
PAR18	The team is small. So the person in the infrastructure team is also in the discussion with the business. Everybody participates together in the beginning.
Eric	But what happens if the team scales out?
PAR18	If it scales out, what's going to happen is that I still want to them to be a part of the discussion. One of the feedback I heard, not from my team but from the other teams, is that if one group starts and passes on to another for production, things will be lost. I don't want that to happen with my team. So someone for the infrastructure/campaign team will be involved from the beginning. At times, they are also the ones doing the programming for the campaigns. So there's no loss. And my team meetings help because we go

through what we've done. Let's say for campaigns. We don't have a centralised campaign process in the bank, each one does his own thing. So this is creating a single campaign view.

Eric   So we could therefore say that in the flow from business problem to data problem to date solution to business solution, by having those people in the same meeting, you have somehow compressed the entire multi-stage translation. Because the campaign folks have to give their opinions on what is feasible. And so you force this process all into one session and it iterates.

PAR18   Yes, but again, it's still work-in-progress. But now that's how it's done. I also want to add that most of the time, it's not the business that's saying they want to do stuff. Most of the projects are actually initiated by us, the Analytics function. We initiate most of the analytics and initiatives.

Eric   So in this initiation, you are driving it with your experience. You read the reports and see the potential opportunity and send your folks off to conduct some diagnostics to validate the opportunity.

PAR18   Yes.

Eric   In some sense, you play the role of the business stakeholder. Because you are driving these initiatives. When you tell your people what to do, how do they contextualise the opportunity for themselves? Because what you see is an outcome of many things that happen in the bank, from policies to actions. How does your team 'dial it back' and question how the business got to stage - is it really an opportunity or merely a manifestation of all that's gone before?

PAR18   I start with the concept. I will then get my people involved and walk them through the concept. I also want people to think. I don't everything and I could be missing things.

Eric   You don't bring the business stakeholders into this discussion at this stage?

PAR18   No, at this stage, it's still an internal brainstorm. Me and my team work on it together, and it's just a framework. And then now it's time to get the numbers behind the framework. And as the analytics team now extracts the numbers, they become intimately familiar with the context and the framework. And then once we start reviewing the numbers, we may think that it's all common sense. We test ourselves - based on what's happening out there, does this make sense? Once we feel confident with the framework and numbers, we then bring the business in and we present to them.

Eric   In populating the data behind the agreed framework, do you encourage your people to also talk to the business to see if the framework is robust and complete?

PAR18   That happens when we talk to the business.

Eric   After the data is populated?

PAR18   Yes. And once we bring the business in, there will be some tweaking. And the framework is not final. We make a mutual decision on what makes sense. I will give the business various options on the decision criteria.

Eric   In creating and populating this framework or 'strawman', if your team was not physically with you in Manila or were in Cebu say, or even in India, would that work?

PAR18   I think having worked with offsite teams, it really depends on what you are trying to do. If it's just Reporting, it can work. Today everything is face-to-face and that works well. In the meetings I'm not always there, and the face-to-face builds the relationship for the team. So my team is now more comfortable talking to the business stakeholders. And we are in the same building and it's convenient to meet.

Eric   There are 2 things here. There's a benefit for your analytics team to be close together during strawman discussion …

PAR18   Yes.

Eric   And being close to the business when validating the strawman.

PAR18   Yes.

Eric   Today you have a business stakeholder based in Cebu – [subsidiary of ORG7].

PAR18   Yes, we just started.

Eric   So you are in some sense an offshore analytics team to the business stakeholders in Cebu.

PAR18   The business stakeholders are not all entirely in Cebu. The CEO/Chairman PAR17 is in Manila.

Eric   If PAR17 was not in Manila, would it have been difficult?

PAR18   I have to see how it would work. Right now, things are working because the physical proximity helps. I'll give you an example. Right now we are working with an external vendor related to PAR17's business. The vendor is offsite and we interact via conference calls and emails. The vendor is in Manila, they are Filipinos, but just not in the office. Initially, the interaction was not working. The interpretation was not correct. Things were getting lost in translation. To my team, it seems like the task was simple to understand, but having different backgrounds, it's not good to assume that what's simple for us is also simple for them. So we asked the person to come see us. And that worked.

Eric   So things were getting lost explaining the same framework over the phone versus face-to-face. Even though you are all in the same country with the same cultural backgrounds.

PAR18   Yes. It's just like in ORG3 when we used to send out templates from the region to the countries. When the countries populated it, they would have a different translation, or they would modify the template because they think it doesn't work. So it's similar. If there's some ambiguity, they will interpret it themselves. Having face-to-face or even telepresence would work. So with the vendor, the face-to-face helped to clarify; in the beginning I was there, and now the actual work is being done between my team members and the vendor. And the actual product, when I saw it, was really good. I was shocked; I was so impressed. It was a real-time analytics and simulation solution.

Eric   If you had to double or triple your team …

PAR18   I support the entire bank, you know.

Eric   So as your business expands into the different regions in Philippines, and you scale up your team to support it, would you keep your entire analytics team with you in Manila? Or would you embed some of your team members into the different regions together with the business stakeholders? How would you coordinate?

PAR18   For it to work, the analytics sub-teams would need to be co-located with the business stakeholders. If the business was not there, I would not move my analytics team there. And that would complement the team in Manila.

Eric   Let's say the Cebu business grows, resource is cheap and you co-locate your analytics team there with the business stakeholders. Would you placed all the incremental analytics resources there or would you only place a percentage of them? In essence, is it more important for them to be co-located with the business or co-located with you?

PAR18   It depends on the size of the business. There's only one line-of-business in Cebu while the rest are in Manila. I would keep most of the extra analytics resources in Manila because most of the business is there. So I would co-locate based on the majority presence of the business.

Eric   How would you modify your internal interaction process or team structure if you have such a co-location?

PAR18   Of course we cannot fly all the time, so we would use video conferencing technology. It's still important to have face-to-face. I don't like emails. They are useful for clarification, but when I see the emails going back-and-forth, and after 2 emails if they still don't understand, you need to have a face-to-face. Doesn't have to be physical but at least over a web-cam.

Eric   In ORG3 with the offshore Bangalore team, did we do web-cam?

PAR18   No we didn't. But we had them travel to Singapore to meet with us. We flew in the guy who was doing the Reporting, and it did make it faster to understand the task. So there is value in proximity.

Eric   As you now try to extract yourself away from the day-to-day interactions with the business and have your analytics team members take-over, would

you create dedicated vertical interfaces for the different business stakeholders? Like a team supporting Cards, a team supporting Retail?

PAR18   I have something like that already. PAR14 is the head of analytics. Under her, she has someone who is responsible for Cards and so on.

Eric   Do you insist that the analytics person supporting Cards must attend all the Cards weekly one-down meetings, the person supporting Deposits must attend all the Deposits weekly one-down meetings? A sort-of 'seat at the table'. Is that important?

PAR18   Yes, it's important. So they have context to what they are doing. It helps them to be more innovative instead of just taking orders. If someone ask to do a frequency count by city, they could then ask why the person is looking at the data this way and is there a better solution.

Eric   While there is a value to have the analytics person be part of the business one-down meetings, does the business leader feel uncomfortable to reveal too much of their business?

PAR18   Yes, I understand. But the analysts don't attend all meetings. There will be private meeting between me and the head of the business for example, and the one-downs are not there. And once we are ready to socialise it, we invite the other relevant stakeholders in. It's important that all the stakeholders have to be there during the discussion. It's also good for relationship building to bring everyone together.

Eric   If I may paraphrase what I'm hearing. There are 2 stages. Firstly, there are meetings designed to seek convergence. While you see the opportunity in the data, exactly how you would capture this opportunity may not be obvious. So these early meetings that happen, the primary objective is to seek convergence. And once convergence is obtained, then the rest of the stakeholders are brought in, so there's a single story that's told to them, and there's not subsequent mis-interpretation. But the convergence takes a while and is iterative.

PAR18   And also there would be informal discussion, particularly when you are seating next to the business stakeholder.

Eric   How important is that? I'm hearing that the 'water cooler chit chat' is so vital …

PAR18   It's important! It's good for the business stakeholder to not have surprises. Since my team initiates a lot of the initiatives, it's good that we give the primary business stakeholders a heads-up from the get-go. So they have the opportunity to voice their objective or inform you that it's not their priority. So you don't waste your time. So those water-cooler talks reduce the surprises at the end when the product is already fully developed and they are seeing it for the first time.

Eric   And because of that, the physical proximity is important.

PAR18   Yes.

Eric	So the water-cooler discussion is lost if you offshore.
PAR18	Yes. The water-cooler discussion happens a lot. We have a weekly senior management meeting and after that meeting, people stay on for small discussions amongst ourselves.
Eric	Last question. As you 'centralise' your team, bringing your team together; they may have been dispersed across various departments previously, and then subsequently maybe there is some offshoring or outsourcing to external vendors. From your experience, are there certain things that you wouldn't do?
PAR18	There could be a hybrid. If the work is repeatable and straight-forward, I think that activity can be done offsite. But the designing aspect, coming up with the framework, it's important to be co-located for that. For the actual roll-out, it's ok to be offsite.
Eric	So there's a thinking and doing part …
PAR18	Take campaigns for example. Can we offshore campaigns? As we know, there's always going to be changes in campaigns. Since we are not as sophisticated as our previous bank [ORG3], I think I can still afford to have someone outside of Manila running the campaigns, but only after it's been 'normalised'. But not for the design phase. For the design phase, I think it's good to be physically with the team. Is it 100% full-time onsite, maybe not necessary. But as long as we are working on 'how it's going to look like' and 'seeing the first execution', it's good to be with the team.
Eric	Because it's ambiguous. Anything that's ambiguous and not necessarily repeatable yet, you would not offshore?
PAR18	Yes! When it's ambiguous, it's good have it face-to-face.
Eric	Eric thanked PAR18 for her time, and informed her that he will be sharing the transcribed notes with her to allow for opportunities to make any changes and corrections.

Additional questions emailed and received on Feb 26, 2017

Eric	What are the performance goals (i.e. for performance appraisal / annual performance scorecard) that your Analytics function carry?
PAR18	(a) Balance and revenue growth (b) Customer product penetration (c) Improving efficiency
Eric	Do you feel that these performance goals are aligned to your Analytics function's capabilities?
PAR18	Yes

Eric	On what processes does your Analytics function have approval authority on?
PAR18	Campaign programs.
Eric	On what processes must your Analytics function be consulted on or provide its concurrence?
PAR18	Campaigns, new consumer credit products
Eric	Does your Analytics function own any policies?
PAR18	Targeting criteria.
Eric	Is your Analytics function formally consulted on all business initiatives that require data?
PAR18	Yes.

Participant Code	PAR19
Title	Head of Analytics
Organisation Code	ORG9
Date	July 7, 2016
Legend	[xxx] implies redacted due to participant confidentiality

Person	Transcription
Eric	Eric thanked PAR19 and explained the BI&A organisation design research.

Eric   If we could start by you giving a brief background of your experiences, particularly as it relates to the Analytics domain?

PAR19   I started working in 1995; I'm trained in Computer Science. I was schooled at the National University of Singapore, in a new discipline called Theoretical Computer Science. When I finished the degree, I wanted to be a research assistant, but then I found a job with ORG3, related to MIS. That was 1995 and I had no idea what MIS meant. I knew the acronym stood for 'Management Information System', and I thought it was a 'system'. I joined ORG3's Credit Risk MIS, and discovered that it was all about 'Reporting' - I had to pull data from the database, working in SAS, looking at credit card and loan information, etc. Credit MIS is a very well-defined subject, the way people think about credit, delinquencies, etc. Measures such as exposure and utilisation are very well-established. So I did that work for about 3 years, and then I went to join the branches as a sales person as I wanted to experience the front-line. I did that for about 2.5 years, and then I joined the Regional Analytics Unit; at that time they had set up a modelling 'factory' consisting of about 3-4 persons, of which I was one. And that was the time that ORG3 experimented with FICO and trying to bring in that technology. So I had a chance to work with FICO to understand their approach but very soon, ORG3 developed their own methodologies. As the role progressed, the Regional Analytics Unit was no longer just doing Risk Analytics but expanded to cover Marketing Analytics. Our main scope at that time was to build models. We introduced Segmentation, Response Models, etc. And then we started setting Analytics units across the countries - we called them Database Marketing. We started one in Japan. A couple of us were asked to go to Japan to help kick-off the process. That was interesting because we witnessed a country that had nothing. Obviously we went through an MIS-building phase and soon after, we worked on Portfolio Management and Dashboards, and then we introduced Modelling, Targeting processes. And then I went to ORG3 Taiwan, which was a different business. They had just gone through the big earthquake (the '923 earthquake') and the country was in repair mode. There was a lot of delinquency problems and the credit risk team tightened up everything. I was asked to set up a similar Database Marketing unit for Taiwan. But Taiwan has isolated teams doing MIS already, so what we did was to pull them together into one centralised unit and got to people to think in a different way ... we had to get the people in MIS to think more analytically.

Eric   Taiwan was different from Japan? You mentioned that Japan had nothing whereas Taiwan had fragmented, existing capabilities? So Japan was more 'building' whereas Taiwan was more 'consolidating'?

PAR19   Yes. The countries were quite different and we took different approaches. In Japan, we had the opportunity to tell the people what to look at, and we had a lot of regional support and resources, including senior management. So we had a chance to define what the Japan business should be looking at and how to measure it. So, it was a lot easier than Taiwan, to be honest. Taiwan was challenging because of the credit environment and we also had to deal with the fact that the people were entrenched in their ways of working. We had to move the people from a factual discussion (what the MIS is saying) to a supposition discussion (why is the MIS saying this). And that's where things become ambiguous, and looking at the factual MIS doesn't always give you the answers. You have to make further suppositions, you have to make inferences, you have to make educated guesses based on the best facts you have at that point in time. And it's quite multi-faceted. You can look at the same problem from many different angles, and then try to triangulate and make a best-guess on why you think things are happening in the way they are. So I figured out that the data isn't going to tell you 'why'; the data will tell you 'what'. 'What happened' and maybe to some extent, 'How did it happen'. As to 'Why it happened', why customers buy a particular product ... and I eventually came to the conclusion that 'I don't know'. The data will never tell you. If you really want to know 'why', then we should reach out to those customers that are exhibiting those behaviours and ask them. But the business was always reluctant to pursue that. I don't know why. I would have done it. And because of the credit risk environment in Taiwan, we had to use a lot of facts to counter the facts from the Risk Management side. So there was a lot of using facts to counter-argue facts. To move it away from an emotional debate into a more quantitative, data-driven debate. After Taiwan, I joined [multinational bank] in Hong Kong. By then I had thought that Analytics was going to rule the world. I was with HK [multinational bank] for a year, after which they decided to dismantle the Business Intelligence unit. Half the team was cut and I was asked to leave as well. That episode gave me a shock and I realise that Analytics isn't going to run the world after all.

Eric   Was the reduction in [multinational bank] HK due to offshoring to Singapore?

PAR19   No, they just had business pressures and they had to cut people. So that's when I first learnt that when the axe comes down, it's the people who bring in the sales who are least affected. The people presenting the facts are not that valuable. That was an important episode for me because I learnt humility. You can have all the information about the organisation, but if you are not in the frontline or you're not running a product line, you'll always be amongst those targeted when the axe comes down. So I went and join [second multinational bank] in HK where I did an Analytics role. But they didn't have a datawarehouse, so they asked me to build it. So I had the opportunity to talk to various vendors about datawarehousing technologies. I knew what I didn't want - I didn't want the ORG3 datawarehouse, which was SAS-based flat files. We had a chance to look at more modern technologies and I also brought in a campaign management tool all the way to the MIS dashboard and presentation layers. It was going back to basics to build the data architecture and MIS dashboards. That work went on for about 2-3 years, and towards the end, I started building up the Analytics capabilities, using a hub-and-spoke approach – [second multinational bank] was a much

smaller bank. They had a regional unit and smaller country teams doing the country analysis.

Eric   Where was the regional unit?

PAR19   It was based in Hong Kong.

Eric   So Hong Kong was both the country and regional unit?

PAR19   Yes. They had a country office and regional office based in Hong Kong. So were happily minding our own business until the fiasco with RBS, Santander and Fortis Bank where they bought [second multinational bank] and started breaking it up. [Third multinational bank] took over most of the consumer/retail operations in this part of the world. [Third multinational bank] was quite proud of themselves at that time - having successfully taken over [xxx] Bank (I think) in UK. So they were quite confident of being able to absorb other companies and make it work for them. Unfortunately, they ran into the Lehman Brother's crisis too and things went south all the way. Very quickly, they decided to pull out. So at that time, I was moving back-and-forth between the Datawarehouse/Analytics unit and the Risk unit, but honestly, I had nothing to do. We were just waiting to turn off the lights. Finally I joined back ORG3 in Hong Kong, and by then, the Database Marketing unit had evolved into Decision Management. So I ran the Decision Management team for HK. I now didn't think that Analytics runs the world. I was aware of the difference between MIS, Analytics, Operations, and all that, and I had my own views on whether we should centralise or do a blended combination. While at ORG3 HK, I chose to spend more of time with the business than with my analytics colleagues. I used to spend a lot of my time with my MIS and Analytics colleagues to make sure that they are doing the right thing and following the right methods, but when I re-joined ORG3 HK, I realise that I could get things to move a lot faster and more effectively by getting the business to think in a certain way, and using that to drive how the Decision Management unit needs to operate. That went on for some time, and then ORG3 went through a series of regionalisation ... personally, I don't have a problem with regionalisation, but in my opinion, I don't think ORG3 should ever exist as a regionally-run or centrally-run business. It's better run as a federated organisation, where they have strong local government and a loose, guiding headquarters. But ORG3 was moving in the other direction and I didn't like that.

PAR19   Then ORG9 HK offered me a job where I could spend 80% of time doing analysis - no more compliance nonsense, no more MIS, no more campaign management, and they would pay me a little bit more! And they increased by annual leave from 20 to 30 days! Wow! I don't see why I shouldn't go! So I moved over to ORG9 HK and ran the analytics function. ORG9 has a totally different operating model. In many of the banks that I worked for, the analytics chain of activities usually start with having regular MIS, to adhoc or short-term analysis to complex, open-ended problems that requires multiple iterations, attempts and discussions to solve, and you don't always know whether you've arrived at the answer. They very ambiguous stuff - until finally everyone agrees that we've covered all angles and we comfortable with the insights ... and that process takes 3-4 months. In ORG3, we used to do within one single unit - Decision Management, and supported

by the regional datawarehouse team. ORG9 literally dismantles this - Analytics is Analytics, Data & Information Management runs the MIS and Campaigns, and then Data Architecture which is the IT team that owns and supports the datawarehouse unlike ORG3 where Decision Management owns the datawarehouse. Customer Contact Orchestration goes to the Customer Relationship Management (CRM) team. So ORG9 dismantles this into 3 component units. That's why they can guarantee to me that I would be spending most of my time doing only Analytics and no compliance work. And it turns out to be generally true.

Eric   So to paraphrase, ORG9 has taken the broad definition of analytics and sub-divided it into Insights Analytics and Operational Analytics, and within Operational Analytics, further sub-divide it into Foundational (which is the Data Architecture team) and Executional (which is the MIS and Campaign). Under Insights Analytics, they sub-divide it into Content and the analysis of the Content.

PAR19   Yes. The way we think about it is in ORG9 is that there are a few aspects of Analytics - there is customer contact where you send out communications such as SMS, eDM, phone calls, or drawing people to visit your website. So how effective is that contact? We look at the funnel - list deployed, contact made, actioned, appointment made, conversation had, click-through and all the way to the sales conversion. This is the Sales Funnel. That is what they call contact-centric which is campaign-specific and program-specific. Then there are the Products (different type of banking products). Then they have Customer Propositions where they look at premier banking and such. And then they have Pricing. And then they have Channel. And they have Sales Management. Internally, we call this 'Specialism', but that's literally the Analytics sub-divided into these kinds of perspectives. And in that way, they were able to more effectively centralise the pool of analytics capabilities across multiple locations. We have people in Bangalore, Guangzhou and Chicago, in Europe, etc. Bangalore is the largest team comprising of 300-400 people. And they organise the Bangalore team into different groups that specialise in different product analysis coverage - e.g. portfolio management, pricing. These centralised analytical resources deal with more long-term and strategic problems, while the in-country analytics team deal with the short-term and adhoc work. They have in-country customer contact team that looks at the campaigns. The actual campaign list is provided by Data & Information Management team while customer contact decisions are orchestrated by the CRM team.

Eric   So you have federated organisation model. You have in-country analytic teams and centres of excellence. Are your COEs in locations where you also have a business presence? So the COEs are not isolated?

PAR19   While we have a business presence in Guangzhou, the COE is not supporting that business or the China business. The HK Analytics team work with the Guangzhou team via WebEx and such. And it's only a 2-hour flight between us, so we do travel there frequently as well. So the Guangzhou COE is closer to the HK team in terms of work content, although they are physically close to the Guangzhou ORG9 business. It's like what ORG3 was trying to do, but I didn't believe they could pull it off because it's not in their DNA.

Eric	What about the Campaigns, MIS and Datawarehouse? Is that similarly federated?
PAR19	The Datawarehouse team is federated - it's run centrally as a service by IT, providing service to Data & Information Management team or to the Analytics team or to the Risk team. They have COEs as well, though not in the same locations as the Analytics COEs. Due to certain constraints of legacy tools. The Data & Information Management team is responsible for extracting the campaign leads and flowing through the system, including fulfilment. They work with the country CRM team which defines the campaigns and orchestrate where each campaign list goes to. Analytics supports the CRM team by providing them with the targeting solution.
Eric	So campaign design is with Analytics and campaign execution is with Data & Information Management?
PAR19	Not exactly. The execution is definitely with the Data & Information Management team. But there are a few aspects to campaign design. The targeting is with Analytics. The reason for targeting is between CRM and Products. The pricing, offer and script is between CRM and Sales or Product. CRM is the glue to pulls all the pieces together. They get the targeting tools from Analytics, they discuss with Products on the pricing, etc. and they shape that into requirements which they then hand off to the Data & Information Management team for them to execute.
Eric	Does the CRM team do their own analysis?
PAR19	They do some. But their focus is on contact management. So here's where it gets ambiguous. It depends on the person driving the analytical solution within the CRM team. In small businesses like Singapore and Malaysia, the CRM team and the Analytics are headed by the same person. So that person has to flip between open-ended analysis and campaign-specific contact analysis. But they are still supported by a regional Data & Information Management team for execution. But in home markets like UK and HK, the Analytics team is separate from CRM and headed by different individuals. Sometimes the two individuals don't work well together and things can get hard. While there are times when the two individuals work well and it becomes a very powerful combination.
Eric	Eric next takes PAR19 through the construct of Business Problem --> Data Problem --> Data Solution --> Business Solution.
Eric	Given how the various analytic sub-teams and units are organised, and having in-country and COEs, where does ambiguity or equivocality creep in along the construct? Let's take the Guangzhou COE as an example. They don't support the local China business. And you have teams specialising in solving certain types of problems. Let's say Cards Utilisation. How does someone in the Guangzhou COE get context and background for solving a specific cards utilisation problem?
PAR19	Let me outline how I solve it versus how the larger Analytics organisation solves it. The way I solve it is that I have a very experienced analyst here in HK who face-off directly with the business. I have a team of 6 people here in

HK, and they each have about 8-10 years of experience in business analytics, not necessarily modelling, and they spend a lot of time with the business. They play the role of translating the business problem into a data problem.

Eric   Is your onsite team part of the business management team? They attend the business management and leadership meetings?

PAR19   Yes, but not exactly. I'm instituting some of these practices next year. In UK, they are already part of the product management team and participates in their discussions. They do a lot of 'framework-ing' - this is how we think about the problem analytically. They develop various hypothesis and look at the problem from various angles and perspectives.

Eric   So you start out with an ambiguous or equivocal problem and you develop a bunch of hypothesis and through the iterative process, you converge on a few ideas or main hypotheses.

PAR19   Yes, that is correct. So that's how we translate it into what we call an 'analytical framework'. And once the business agrees and gives its endorsement, we go to our 'hands and legs' in Guangzhou (these are COE resources dedicated to me; I control their work agenda), and we get them to work on the analysis and solution. For very junior people and those new to the organisation, we send them templates; for the sake of expediency. For the more senior people, we have a conversation with them; we give them the background and context.

Eric   So your in-country business analysts are not the ones pulling the data, crunching it and analysing it? Accessing the datawarehouse is done by the Guangzhou team or the Bangalore team? While your in-country team attends meetings and play the role of relationship manager?

PAR19   Yes, kind of like an in-house consultant. The in-house analysts actually have access to data and they can pull it for themselves if they need to. They can write SAS programs, can do analysis. But they spend 60-70% of their time to shape and frame the problem, clarify and negotiate timelines, etc.

Eric   So you between your in-country analysts and the business, you achieve convergence on what the business problem is, and then you give it over to Guangzhou and Bangalore. Even if you do it through templates and WebEx calls, do things break down? Does the context get lost in translation?

PAR19   Yes, it does.

Eric   The Guangzhou or Bangalore guys never face-off with the business directly?

PAR19   We try to involve them in the upfront discussion with the business and products. As well as any major discussion involving change in tactics or directions. As well as the final presentation. So that they feel that they are part of the solutioning and not just template-fillers.

Eric   So by the time the template or request comes to the COE, they've already had the opportunity to dial into a meeting to participate in the discussion

between your in-country analysts and the business, to already get the background and context.

PAR19   So that's how I run it from a HK perspective. I feel this reduces the risk of things being done out of context.

Eric   So despite this, things still get mis-interpreted. Why? What's causing it? Is it because of change of resource, but you have a dedicated person different specialised activities.

PAR19   To answer the question, I need to step back a little bit. When I first took over this operation, we already had the Guangzhou team, which at that time, was managed as a common pool of resources. We find the most available person for the in-coming analytical request. We found that that doesn't really work because we spend a lot of time explaining the context and educating them. It was time-consuming. The COE folks are mostly junior people and we had to use a lot of templates to get them to work. So we decided to divide the pool up into 'ponds of resources' where the people stay on the same subject for up to 1.5 years. So this was almost a 1-to-1 or 1-to-2 relationship. This gives them a chance to be familiar with the subject domain. There are a few things that I always tell my folks - you first need to understand 'data', and then you need to understand the product you are working on, and then you need to understand the business process associated with the products, and finally, how does this business process fit into the larger business context. The only way to achieve that, based on my experience, is to dedicate people to that subject for a period of time. Otherwise, the pooled resource approach didn't allow us to get traction. I switched into this mode about 2 years ago, and so far it's worked pretty well.

Eric   Is there work that you wouldn't give to Guangzhou? Or you are prepared to give 100% of the analytical work to Guangzhou? Or do you keep the more ambiguous and more complex work in-country?

PAR19   Yes, we have that too. If the work requires a very fast turn-around, and work that is very, very ambiguous. These works we would keep in-country. Because we feel that by the time we explain the very, very ambiguous work to Guangzhou, my in-country senior analyst would have pulled the data and cobbled some solution together already. The good thing with the very ambiguous stuff is that nobody expects and answer right away. Everybody expects a pretty long exploratory and iterative process. "Let's get some information, get a feel for it, and see how it goes." We are able to recognise these kinds of very ambiguous problems based on our discussion with the business, and particularly if it's coming from a senior business person - we would usually do this in-country. Until it becomes something more specific and more 'framed', and then we would pass it along to Guangzhou.

Eric   If cost wasn't an issue - which I'm assuming it is, that's why you have the COE in Guangzhou - do you think you would run faster by having the analytics talent in Hong Kong?

PAR19   To be fair, I don't think cost was ever the issue. At least for ORG9. Firstly, in this market, you get junior people, and after a while, they have high expectations - they want to do modelling, they want to be part of the whole

business discussion, they want to be able to shape the entire analytics framework/approach. The analysts demand and aspirations are very high and not necessarily in line with their actual capabilities. Plus you can't enough talent here or in any given market. Secondly, ORG9 is a very centrally-run organisation, so the notion of COEs is well accepted, not just us, but we have COEs for Digital that's been centrally run across the globe from multiple locations. The business accepts this COE business model too.

Eric   What I'm hearing from some of my interviews is the following: the choice of COE location is based on the greater pool of analytical talent in those areas and they are cheaper, but the work that is being offshored to the COE tends to be operational, non-ambiguous, predictable and repeatable work, low value work. So why should having greater talent in those COE locations matter since the resource are not reality leveraged?

PAR19   I think a little differently. I cannot give them high-end work at this point in time but I do really want to give them high-end work at some point in time. I really want to do that. And I believe I can do that by giving them time to grow and flourish. So I tell my offsite guys - use this period of time to build you knowledge and your skillsets, layer by layer. Your data knowledge, your product knowledge, your business process knowledge, your business context knowledge. I remind them that they are on this trajectory. Once they get to the layer of business process knowledge, I'm ready to let them talk and interface directly with the in-country business counterparts. But as long as you have reached that layer of knowledge, then you have no choice but to come under the supervision of my in-country senior analysts. So I'm very ready to do that. But it's just that they (the COE) are not staying long enough.

Eric   That's what I'm hearing - that many of the COEs have high attrition rates.

PAR19   Yes, it's true. We've seen over the last 2 years in Guangzhou poaching from the likes of Alipay and Tencentpay. They are taking people with 2 years of experience who are just capable of dealing with data and doing regular MIS, and pay them a lot of money. So we had to increase our compensation package to these people by about 30-40% over the last 2 years. It's not insignificant. But I took the attrition as an opportunity to hire different types of people. We use to hire people who know SAS, who are from an Information Management kind of background. In the last 2 years, as we replaced the attrition, I started hiring people from different backgrounds, because I know I have to train them anyways ...

Eric   So you have a say in terms of who Guangzhou hires?

PAR19   Yes, I get involved in the interview process. I take an active role in managing the COE talent. I don't treat them as an offshore 'factory'; I treat them as part of my team. So I hired a guy with a PhD in Physics. I hired another one with an Arts background. I hired one young girl who was working in Singapore in a small commodities trading company. I hired another girl from Shanghai who worked in the supermarket like a Tesco equivalent. So I deliberately went to hire these non-banking people because I believe that the banking people attrite quickly. Whereas for those without a banking background who wanted to join us, they would likely have a

stronger desire to learn. I also hire them because of their thought process rather than for their technical skills which can be trained. So we look for abilities to associate different things together, for ability to handle open-ended questions and bring in a multi-facet perspective. So I'm no longer looking for the hard skills, I'm going for the soft skills. And that's why I have to be part of the hiring process. But the problem with this approach is that I cannot industrialise it. I know who I want to look for, but my senior colleagues don't.

Eric   So you've got different pockets of capabilities within the COE depending on the different in-country units that are interfacing with them and shaping them. The COE ultimately gets shaped by the in-country analytics groups that uses them.

PAR19   Yes. Where countries are less proactive in shaping the COE, like Singapore and Malaysia where they treat them like a factory, that's where you observe things become disconnected. I've seen the COE come up with what they call 'solutions' or 'playbook of solutions'. They bring the playbook to the business and get them to tell the COE what they want. They try to 'sell' the playbook to the business and I get very annoyed with that.

Eric   Let's say you've engaged with the Guangzhou COE, structured the problem and like the solution. So I know what the problem statement is, I've gotten context and clarity. Now I need to decide if I want to build a segmentation or a predictive model, etc. I have to turn the data problem into a data solution, and in turn, turn it into some kind of business solution. With your Data & Information Management team separated from your Analytics team, how do you overcome ambiguity or mis-interpretation, as the solution now flows through the value chain into execution?

PAR19   We haven't really solved the problem in a satisfactory way. The glue acting between us (Analytics) and the Data & Information Management is the CRM team. So they utilise data analytic forms to do that. That form is 8 A3-size pages! So it is very detailed. The Data & Information Management team uses that as their specification or requirements document, and they simply follow it; not too much questions needed. If models are needed, the Analytics team will prepare the models, run it, and have the Data & Information Management team pick up the output. So it's a very mechanical manufacturing process by then. When they do need explanation, the Data & Information Management team would call the Analytics team for clarification. And the CRM team plays the role to coordinate everything. The 'price' we pay for this is that the 'manufacturing' process becomes longer, because there's quality assurance, there's the filling up of the 8-pages of A3-size requirements, and the campaign design process. If it's a new campaign, it takes 2-6 weeks to craft something new. We are now trying to change this process; we are now modernising our CRM toolkit.

Eric   How does knowledge management play a role here? When a request comes in for a campaign, and they use Analytics and models, do you recognise that you've done something similar 2 years ago? And you can reference the historic outcome and learnings of the past campaign? So that iteratively, the campaign design is leveraging knowledge that it built up progressively.

PAR19   We rely on the people's experience for knowledge management. There is no formal mechanism. There is no systemic catalogue. We are also trying to solve this by looking at various off-the-shelf solutions for automated campaign tracking and optimisation, like APT which was recently acquired by MasterCard Advisors. It's a cloud-based solution that allows us to institutionalise our knowledge.

Eric   In constructing the segmentation and models with the Guangzhou team, do you already take into account the business, data and process constraints? For example, data collection and curation may be problematic to operationalise. Do you have these kinds of discussion during the data solutioning process?

PAR19   Usually these constraints are flushed out at the initial discussion with the business. For example, one of the most common things I say 'no' to is anti-attrition models. Of course we can build the models, but I question the economic viability to implement proactive attrition management due to the occurrence of false positives. So we try to influence the feasibility discussion upfront. So by the time everyone agrees and converges on the problem and approach to solve it, the feasibility issues would already have all been addressed.

Eric   So the choice of data solution is decided upfront based on the constraints of the business?

PAR19   Yes. Hence I come back to my earlier point that I insist my people to be familiar with the 4 layers - data, product, business process, business context. Because it's always possible in the data and possibly the product layer, but when you get to the business process and business context layers, things may not be feasible. I give you an example of this. The COE in Bangalore has a team working on Deposit Pricing. They came to me and said that they had the best price demand model - "I can tell you if you interest rates move by x basis points, the flow of HKD will increase/decrease by y." They tell me that the R-square is 95% or something like that. And it's true. But there's a catch to it. The way they measure the R-square is over a period of 30 days. But when I ask to look at it from a day-to-day prediction basis, the correlation goes pretty off and exceeds my 10% deviation limit. There are days where they are off by +/- 20%. On a rolling 30-day basis, these variations cancel out to give you a nice R-square, but the reality is different. If you are a Deposits product manager in HK and you price wrongly and get low volumes, you'll get a call from the higher-ups at the end of the day asking you what you are going to do about it. And then you panic and do something stupid and you will price it the other way around. That emotional panic or signal is not part of the model. Or maybe it is? And as the main 'money printer' in Hong Kong, if we screw around with our pricing, will we get a call from the regulators? There's just so much unknown to it that I've not been convinced that the model will work on a tactical basis. It's great for studies but I'm not sure it will work.

Eric   Is it feasible that in the future, there will be no in-country Analytics team but only the offshore COEs, or will you always need someone onsite with the business?

PAR19   Well, if I do eventual get to a place where the COE resources are familiar with data, products, business process and business context, and some of them have taken on short-term assignments in the business, I'm open to it. But I can't see it happening soon. Because the duration required to build up the capability of the offshore team is quite lengthy. It takes about 3 years to mature an in-country analyst from junior to someone of some credibility. You would add another 50% of the time to mature someone similar offshore. So we are looking at 6-9 years' time frame. But given enough time, and if the people stay on long enough, and are trained in business knowledge, then perhaps it's possible. We are already doing some bits of that today. So for example, the business came to me to try to understand ATM usage and services across this territory. I don't have bandwidth in-country and I don't have anyone experienced in this domain. So I went to the COE to request for someone with this expertise and have done this before. We found such an analyst in our Chicago COE. So we got him 'hands and legs' from the Bangalore COE to support the Chicago guy. And there was one person in-country who was familiar with extracting the data. And I played the role of interfacing with the business to shape the 3-4 high level business questions. But the guy in Chicago would put together the analytical framework.

Eric   So the COEs are also interfacing amongst themselves and not just 1-on-1 with the in-country Analytics team?

PAR19   Yes. We are starting to see that happening. And that's why I'm open to a world where there is only the COEs. In this example, I would have done it in-country but I didn't have the expertise. And that's really the crux of it. Each market would be constraint by its available expertise and we need to tap across the world for their expertise. So over time, if the COE gains business knowledge capability, and if the organisation can provide a robust conferencing capability, then it should be possible.

Eric   Eric thanked PAR19 for his time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections.

Additional notes

PAR19   I report into the I report jointly into head of Retail Bank Wealth Management HK and regional head of Analytics. Retail Bank Wealth Management = Head of Consumer Bank. So it's like my old [ORG3] Decision Management post at HK.

Person	**Transcription**
Eric	Eric thanked PAR20 and explained the BI&A organisation design research.

| Eric | If we could start with an introduction of yourself - your background and experiences, and particularly, your experiences working with analytics teams. |

| PAR20 | I'm the Deputy Group Head of CBG (Consumer Banking Group) in ORG4. I've been in ORG4 for almost 13 years. I came back from HK 7 months ago, where I was the country head for consumer. Now I'm in a regional functional role. I was formerly from ORG3 as a Management Associate; I worked in Wealth Management and then moved to Business Technology - Internet Banking, Digital, etc., and then went back to Wealth. So that's a little bit of my history. I guess our experience in dealing with data and analytics is an evolution. In the past when we talked about data, it was always about Campaigns, cutting leads, execution - very rudimentary intelligence. We did propensity modelling, look-alike models which were very basic and based on a lot of demographics. Of course at the time when we were doing it, we thought it was sophisticated. Now you know what you know, and you look back and you really see that it's developed and evolved. I think for the Financial industry, we are a little slow to adopt real big data and analytics. I think in the commerce space, especially e-commerce, that has really led the whole evolution in the use of data and analytics. Because it's circumstantial and out of necessity - there's no choice; you don't see the customer, you touch-and-feel the customer ... they have to rely on patterns and behavioural traits to make recommendations. Amazon is the typical example that everybody uses. |

| PAR20 | I would say 4-5 years ago when people were talking about Big Data, it was still very much cliché or a buzz term that people like to throw around. But I would say that in the last 3-4 years, with the whole social media explosion, this whole thing about advocacy, hypocrisy, blogging ... it's becoming very real, this whole Big Data or 'dark data' that is there, and a lot of banks is starting to use. I think if you look at the banks, as an industry, we are slower to adopt. But even within the banking industry, the consumer banking part is faster and ahead. I guess it's because we have more data, and we are a lot like fast-moving-consumer-goods, more retail. Especially for Cards, because it's transactional data. But even a few years ago, it was still very much stuff like targeting big spenders and pushing out offers, but we've gotten more sophisticated recently. And now we have this job title called 'Data Scientist'. In the past, they were internal programmers who were asked to crunch data; they needed SAS skills. Now this is recognised as a specialised field. And we have our own data scientists and we have a lot of tie-ups with A-Star and SMU. Because we recognise that going forward, on the back of our whole digital ambition, there is no choice but to use data. Because I'm not going to have the luxury of seeing customers face-to-face. |

PAR20   And I also think in this time of cost-cutting and spend-smart, where margins are being squeezed, it is not easy for us to do mass, above-the-line or below-the-line marketing to reach our customer 'blindly'. Even in the past when we did below-the-line, it was supposed to be targeted but you know that the precision is not there. Today, with data, we are in a much better position to fine-tune the datasets and the targeting. We are able to highly customised messaging to customers only because of our ability to use data. But that is also supported by technological advancements. Without the delivery mechanism, we won't be able to accomplish much. So it goes hand-in-hand.

Eric   So in a sense, the industry has matured on both sides - the capabilities, the thought process, the execution process …

PAR20   And the education part as well. In this respect, we have to thank the 'disruptors', because they had no choice, they had to find an alternate way to get to the end-user, and we are learning from them.

Eric   When you ran the HK business, the Analytics function reported directly into you. And now back in Singapore, the Group Analytics function also reported into you. I'm going to use the term Business Intelligence and Analytics (BI&A) to encompass the broad spectrum of what people may understand as Analytics, which can include Campaign Management, Reporting, etc. So what does BI&A mean to you specifically, given you experiences both in market and now in a functional role?

PAR20   BI&A is about decision-making. It clarifies a lot of blind spots for us. It allows us to make investments with a lot more confidence that we are reaching the right audience. It also allows us to be ahead of the curve. We don't push to the customer anymore; the customer decides when. We no longer operate in vertical for us, in terms of product sets. We cannot push out products to customers anymore. It has to be solution-based. But even if it's solution-based, how do you influence the decision-making? And that you can only do during the 'moment of truth'. And you can only do that when you have the data and be able to predict. It adds a lot more science to the way we run our business. I would like to think it adds a lot more accuracy. It's also about predicting customer behaviour and being one-step ahead. That's why I think Analytics, for us, is very key. It has evolved from Campaign Management ... you still need to do that ... but you will see that the composition of people has shifted more to the data scientists who are analysing and providing insights rather than those doing the grunt work.

Eric   Less of the people doing campaigns and reporting?

PAR20   Correct. But that's also because we have the technology to support. And organisationally-speaking, you will see that for ORG4 Consumer, Analytics sits with the business. It sits with us … I'm the business. For me, I don't see them as a support unit. And when I was in HK, I always tell my Analytics head that she needs to see herself as a product owner and not as a support; she has a product that can add value to the portfolio manager, to the relationship managers, and to the business. And she needs to market her products, listen to her customers (the internal users) - what are their pain-points, what are they trying to achieve, what is the market doing, and how can she modify and build her product to meet the clients' needs. And that has

always got to be the philosophy for us. I think at some point in time, [Group CEO] did toy with the idea of having a central Analytics team for entire ORG4 ... maybe not so relevant for our large-cap clients but more for the SMEs. We feel that for SME Banking, a lot of the behaviour traits, a lot of the buying behaviour, are fairly similar to Consumer Bank. And so they too can use Analytics better. But that conversation did not pan out to any conclusion because of challenges with skillsets. So today, we still have a very large Analytics group within Consumer Bank and in SME Banking, they have it embedded way down under the COO office.

Eric   More like a utility support?

PAR20   Yes. And you find that we have a lot of sharing with them on what's we're doing on the Consumer Banking side. Because they will not have that big team to do all that sophisticated data analysis, and hence, any ideas that we have, we try to pollinate it across. On the implementation side, I think the mindset between our businesses is still quite different. In the use of data. In that journey, the Consumer Bank is probably a couple of steps ahead in adopting and appreciating how data can help us run our business.

Eric   You mentioned that you see your Analytics as part of your business group. And BI&A is essentially for decision making. Do you see your Analytics team as a partner for you in decision-making to the extent that they have decision rights? There are organisations that I've spoken with who say they believe in Analytics, but the decision sits with the business. The analysts' job is to find insights and recommendations, but they don't co-own or co-decide. How do you view that?

PAR20   I see it as an evolution. Some organisations use the Analytics to validate their thinking, and if the insights don't align, they ignore it, claiming that they know the customers and the business better than then analysts. It's less so now. Here in the head office, particularly with [Group CEO] being such a data guru himself. And even in HK and the other markets, the product manager's first stop will be the Analytics team.

Eric   Why is that the case?

PAR20   I think it started as an outcome of marketing budget reduction where you had to be very selective on your spending and investment. But now there are proven use cases in the way that we want to target our customer, how we want to engage our customers, how we want to transact with them.

Eric   Tone from the top' affects it?

PAR20   Yes, of course. The seniors have always been singing the same tune. But it's the extent that it's been cascaded down. Initially, people were sceptical about Analytics, but over time, I see a lot more adoption. People now see it as a way of decision-making. So, would I or the product managers supersede what the Analytics team propose? I don't see it happening. If there is a disagreement, I see the analysts coming to some point of understanding, I see them trying to understand the data a little bit more, getting the nuances. I see the Analytics team getting a lot more commercial as well. There are still pockets within the Analytics team where the analysts are excited that they

have this whole bunch of data and they can derive insights. The business' pet grouse is "Then what?". So what if I have this customer behaviour? It doesn't help me. You cannot expect the portfolio manager to appreciate ... that the light bulb goes off when they see these numbers. The portfolio managers are running so many campaigns, and they are looking more and more to the Analytics team for help on prioritisation and fine-tuning of approach. I see the partnership becoming more and more like that. Actually, in all our strategy meetings, in all our product launches, in all our customer journey thinking, Analytics has become front-and-centre in everything we do. So the Group and Country Analytics function are busy. So to your point on 'tone from the top', I see it evolving, and I see that it's become more and more of a partnership model these days.

Eric   Eric then proceeds to brief PAR20 on how Uncertainty and Equivocality in information processing affect problem-solving and its potential implication to the organisation design. He then proceeds to explain the construct of business problem translating to data problem, data problem translating to data solution, and data solution translating to business solution.

Eric   So in the ORG4 context, as the business problem gets translated into a data problem, how does the Analytics team have peer-to-peer conversations with the business, so that they are talking at the same frequency. For example, if the business says that they have an attrition problem, the analyst can tell them that they don't need to solve that, that the problem is something else ...

PAR20   Co-location is a given for us. Our Analytics teams are all co-located with the business. They attend all the management meetings. They attend all the strategy planning meetings. Physically. But I do think that the leadership is important. I recognise that the analysts, the data scientists, the coders ... they are a specialist team. But the Analytics head must have some commercial sense. And this means perhaps putting people who don't come from a pure Analytics background into the equation ... as part of rotation. In the past, people didn't want to, and we would not have entertained that thought. We would not have accepted anyone without the pre-requisite technical skills into a senior position in the Analytics team. But in reality, if you are in a senior position, you don't need to be doing coding and programming, or extracting data; you are not hire for that role. You need a person who values and appreciates data, but not necessarily knowing how to crunch it, but able to translate it into commercial action points. One of our challenges is that we don't have enough of such people.

Eric   But is that the role of the Analytics head or the role of the business partner?

PAR20   I think it's both. The business partner also needs to get up the curve over time on the use of data and technology, on the use of digital distribution. It's inevitable. But we still have product managers who are 'old school', and they will be very quickly replaced ... their skillsets are obsolete. They have to evolve. Right now, the first stop for the product managers is always working with the analyst in anything that they do, even at the stage of product development and conceptualisation.

Eric   Because the tone from the top would have mandated it?

PAR20   In the past, that would have been the case. But now, it's more voluntary; I don't have to tell them. And I think it's about value exchange. The product managers see the value. If they don't see the value, it will just be 'checking the box'. So, are all my product managers, portfolio managers, business managers tech savvy? No. But have they cultivated an appreciation for the use of data? Yes. More and more so. Conversely on the Analytics side, are all of them commercial? No. Are they able to translate inferences into action? Not all of them. But I have faith. In the past, not everyone wants to join Analytics because it's a 'geeky' job. But now it's a 'sexy' job; it's a lot more glamourous. And the importance that organisations place on analytics in decision-making is a lot more. So that helps - the whole acceptance of the function.

Eric   Should the Analytics head be a one-down to you?

PAR20   Definitely. No questions asked. Analytics has to be a direct report to the business.

Eric   So that the Analytics head is a peer to your other one-downs?

PAR20   I don't think it's necessarily because of the seniority but rather it's the need for their involvement in high-level strategy discussions. And if the Analytics head is a 2-down, it's a little bit more difficult to have them at these meetings. It's harder to include them in discussions that may or may not necessarily involve analytics. Like buying a bank. But he needs to understand the background and context. For me, my Marketing person, my Tech person, my Operations person, my Analytics person have to be involved in everything we are doing in terms of planning. Even though it may not have a direct impact on their line of work. Because somewhere downstream, it will translate into some action that they need to take. It's easier that they understand the context and background before it happens. Organisationally-speaking, in today's world, data and analytics has to be there. In all of ORG4' 6 markets, the Analytics person reports into the Head of the Consumer Bank. And increasingly, we are looking at the Analytic head double-hat with Customer Segmentation.

Eric   Doesn't PAR5 [ORG4 Group Analytics head] hold a dual role with Customer Experience today?

PAR20   Not anymore; we took it out. For the country Analytics heads, like in HK, the Analytics head also owns Customer Segmentation, which is who do you target, what are the campaigns, how do you engage …

Eric   It's a marketing role?

PAR20   It's a bit grey. In our world, we define Marketing as marketing strategy, what media do you use, what is the messaging, what is the positioning …

Eric   More Marketing Communications …

PAR20   Yes. But when it comes to what campaigns to run, re-activation campaigns, acquisition campaigns. For these campaigns, if we need to do creatives and leverage the agencies, then the Marketing team comes in. But talking about

customer and segmentation strategies, we use a lot of data today. Because we cannot be casting the net so wide. If I want to acquire more Treasures [priority banking] customers, I'm not going to advertise anymore. I have to make sure the conversion rate is there; I have to use data, I have to get a lot more insights. So we have both of these functions report into the Analytics head.

Eric It's done already?

PAR20 Done for Singapore and HK. Because we feel that there's a lot more synergies.

Eric Which means the decision rights of who to target and when to target sits with the Analytics head?

PAR20 It sits with the business, together with the Analytics head. Let's take my role in HK. I would say as a strategy, we would go after affluent customers with at least $200K and above; not interested in anybody who's older than 70 years old and so on. These are broad guidelines. I can't afford to go mass market. So I go to my Analytics head and ask her to figure where I can get 'bang for the buck', where do I find these customers, and what is their propensity to invest. Just because they are demographically eligible doesn't mean they have the propensity to invest. And what is the product sequence to offer. So the Analytics head decides that.

Eric Even the customer engagement journey, the offer?

PAR20 Yes, based on the month-on-book. So the Analytics team will work with the Segment person to plot out the product sequence by time horizon. The actual delivery - the choice of channel, the messaging - is left to the Segment person.

Eric And that Segment person is the one also reporting into the Analytics head?

PAR20 Yes. But the Analytics and Segmentation roles are done by 2 different sub-teams. So the Analytics produces the insights on customer behaviour and how the products should be sequenced over the customer journey, and they pass this over to the Customer Segmentation team to implement. Implementation means designing the offers and executing the campaign. But even in the offer design, the Customer Segmentation team does work closely with the Analytics team to figure of what's best to drive ROI and conversion rates. So they're very embedded with each other. And a lot of it has to do with personalities. The Analytics head cannot be a geek. Because we are embedding the person into the business; everyone's part of the business / front-office. And people need to socialise with each other.

Eric Are there types of problems today that you wouldn't give your Analytics function to solve? For example, you may consider some problems too ambiguous and not within their abilities to solve?

PAR20 I think in almost all instance, there will be some involvement of the Analytics team. But it's a fine line … there are some things that are elementary that … consider the task of scanning the market and competitive

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landscape - is it Analytics or should it be the Product people who should do it? At the operational level, there may be some abuse of the Analytical skills because the Product guys may find it convenient to 'hand-off' to the Analytics team. But as I'm think aloud, well perhaps something like M&A [mergers & acquisition] may not necessarily require Analytics involvement in terms of valuation, but then downstream, when we've bought the bank and need to integrate, then Analytics needs to come in.

Eric   But do you see Analytics, in the way that it's positioned today in ORG4, as Customer Analytics or Marketing Analytics, as opposed to say … "I need you to go figure out how to make my branch more efficient" …

PAR20   Oh, Operationally you mean. Yes, that too. I give you an example - when we were downsizing in HK in terms of branch optimisation, the decision of which branch to shut and which to retain, and how many to shut, and if I relocate, where should I relocate it to ... that is done by the branch networks guys in partnership with the Analytics team. The Analytics guys would be the one who would take a look at the demographics, the geographic opportunities and so on. Singapore ORG4 does a lot of work around optimising branch cost and reducing queues. The queue time analysis is all done by the Analytics team - which are the branches with the longest queue, at what time do the people come in, within x km, where can we offload ...

Eric   OK. I want to talk a little bit about offshoring. Today you have the benefit of running your own country and now here in the regional office. Each country where ORG4 has a significant presence, they would also have their own country Analytics team. To my understanding, the country Analytics team are self-sufficient, but they also leverage on the expertise and guidance from the Group Analytics function. They matrix to the Group Analytics head ...

PAR20   No they don't. There is no matrix reporting.

Eric   I see. So the Group Analytics head is just extending 'influence' to those in the markets.

PAR20   Yes.

Eric   Now that you are managing the Analytics functionally, and if you had to create an offshore centre, let's say to reduce cost, and you can put it in China or in India where you are starting a significant presence in Technology, would you have concerns?

PAR20   I think there are a lot of local country insights that makes it tricky for offshoring to work. In comparison, if you look at Technology, it is still possible to hub it, but I'm not sure Analytics makes sense. You could have a Centre of Excellence, but I think you still need the outpost.

Eric   Must the point of interface between Analytics and the business be physical? Must it be local?

PAR20   If you take my HK experience, the entire Analytics team sits next to the business. We are all together on the same floor. And the way the HK

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Analytics head has organised her team along product lines, rightly or wrongly we can debate,

Eric   Verticals, to face-off with the business.

PAR20   Correct. And if you take the team that faces off with Sales & Distribution (the Branches) for example, they are at the branch all the time. They are not seated there, but they go and visit constantly. They sit with the RMs to understand 'a day in the life'; they interview the RMs, they know exactly what's happening. I think that approach works a little bit better.

Eric   Immersion.

PAR20   Yes, totally! I do think that you can have a Centre of Excellence to facilitate best practices, like predictive models that work. One of the challenges we have as a regional organisation is how do we do success transfer. [Group CEO] tells us that's our job, and if we don't do it, we should be disbanded. Especially coming from the markets, I can tell you that there are so many things that the markets are doing, but we continue to be so Singapore-centric, and so the activities in Singapore gets more attention. After having spent some time in HK, I'm very encouraged that all the markets do a lot of things. It's really how we can create and institutionalise a platform where we can effectively share some of the things we are doing, some of the learnings. And how as a regional organisation - my team - can help to implement.

Eric   Some kind of knowledge management?

PAR20   Yes, but sharing is one thing. But they may not even know how to do it. We've seen it a few times. HK would come up with something great, and the COO would make us sit around in a room and listen to HK. And then everybody would go back to their respective countries, and they'll do what they want to do, or they'll say that they don't have the budget to implement. Or they may that they just don't know how to do it. And given so many things, it is not in their priorities. So I think being able to institutionalise the implementation ... sharing is just the first step ... but facilitating the implementation and understanding it is important. And it's not just about innovation or new digital ways of doing things, it's also about what data analytics is happening. For example, like how the smaller analytical cells in Singapore are doing work around immigration data to create opportunities for cross-sell. Or like in HK, where by looking at where the customer withdraws money from the ATM and where he spends, they can map out where he works and lives, how he spends his time, and what he likes to eat, and that kind of stuff which the other Analytics teams may not be thinking of doing. Or they may not have the resource. Or they may not have the skills, or the level of competencies. And I think a Centre of Excellence will allow for that - the exchange of ideas and potentially also have the person immersed in the country to help facilitate the implementation. But the actual day-to-day, I still think it has to be done in-country. And one of the learnings we had, was that making the Country heads come together and listening to what another Country head is doing, is of no use. They don't like it. It's professional pride. It has to be peer-to-peer. You need to have the Product guys, the Analytics guys come together. Because they understand a bit more. And they can immediately see how it can be implemented.

Eric	So offshoring for you is to facilitate implementation knowledge rather than insights generation, which you believe should take-place in-country. Now how does your Regional Analytics function then get a sense of or participate in problem-solving since they are no co-located with the countries. Problems are solved in the countries and not in the region.
PAR20	The Regional Analytics function is a pretty big team. What they do are largely corporate-driven initiatives. For example, the partnership with SMU, with A-Star. The objective is for them to pilot something within the Group, and then if it works, to implement it in the markets.
Eric	The pilot would be a market pilot?
PAR20	Yes, it will still be a market pilot. Another initiative is contextual marketing. It's a key initiative for the Group, for all of us. In-country, we won't have the skills, and we won't likely prioritise it. So as a broad strategy for all markets, the Regional Analytics team would be responsible for developing the blueprint, the technology behind it (be it looking for a vendor or a solution), and implementing in the market. A person from the Regional Analytics team would have to go to HK for example and facilitate the implementation there. He would of course have to first convince the Country Analytics head to spend the money on it. And if the country has no money, then we will have to find some way of funding it. It will be tops down, but it will still be facilitated otherwise the natural resistance is to delay it. So it will be the Regional Analytic head's role to drive group-level initiative and facilitate it into the markets.
Eric	Do you get complains from the lines of business that your analytic outputs are irrelevant or incomplete?
PAR20	Yes, some of the markets feel that the solution from their own Country Analytics team is not in-depth enough. However, I get more complains from the Analytics teams who sometimes feel that they generate a lot of insights that not enough people are looking at. But I seldom get complains from the business. But now I see more people requesting for reports and insights on-the-go. They are asking the Regional Analytics team how fast they can implement our self-help reporting platform. And once we have self-help, the role of the analyst will change. My portfolio guys won't be so clever. While they can extract the data and create the reports that they want, and do some trend analysis, I'm not sure how deep they can go with their analysis.
Eric	Self-help may have some pros and cons. Some of the self-help users may be quite sophisticated. And even if they are not, every user who pulls his own report will try to force-fit their own perspective or lens onto it. And therefore, with more self-help, would you see a rise in multiple interpretation of the same reports, and the analyst now has to facilitate and navigate that?
PAR20	I see a likely possibility. Especially with the more senior product heads. They may challenge the analyst and say that what they are seeing in the report is different from what the analyst is telling them about the insights. But it's not necessarily a bad thing. Healthy debate is always good, and it shows ownership from the Product guys. And it shows that the analyst needs

to get more commercial. But it all depends on the Analytics leadership. How strong the leadership is able to understand both sides - the commercial side and the data side. Our biggest problem here is that we sometimes feel that our Analytics team does not know how to commercialise or monetise.

Eric   Last question. If you had a chance to redo this function, what would you change about it? Organisationally, what would you have done differently?

PAR20   I would firstly re-write the job description of the Analytics head. I wouldn't necessarily be looking for somebody with a pure analytics background.

Eric   But your current Regional Analytics head doesn't come from a pure analytics background …

PAR20   Yes, that's correct. But in the markets, they still sometimes do. It was a hard battle getting my HK Analytics head in as she didn't come from an analytics background, even though she is performing brilliantly. Structurally, I think it currently works for us, having it in the business. And I don't see the necessity for the country to have a hard-line reporting into the Regional Analytics head. It could be personalities, but I don't see there to be a problem. I would re-define some of the lower down Analytics role and removing some of the ambiguity, because the Analytics role has changed and transformed so much that we shouldn't be looking at the Analytics team as still creating labels and stickers and address [campaign] ... I don't think we have fully leveraged the potential of the Analytics team. But functionally, I think it's working for us now.

Eric   It's more individual competencies? Structurally it seems sound?

PAR20   Yes, I feel it's structurally ok. I don't think there's a need for a centralised enterprise-level analytics team - the argument for it was that it would drive cross-business pollination, it would be able to see data across the Group and be able to identify opportunities for cross-selling between Consumer and Corporate Banking, etc. Data sharing is the often-cited reasons for why we aren't doing enough cross-selling across the corporate lines and this would logically be resolved by having a central databased accessed by the enterprise-level Analytics team. But I'm not sure that the pros of sharing the data will outweigh the focus that we have by having it with the business.

Eric   The more you abstract upwards, the more you may lose context on the ground?

PAR20   Yes, because the nuances are very different. But that's a pain point for us right now.

Eric   Eric thanked PAR20 for her time, and informed her that he will be sharing the transcribed notes with her to allow for opportunities to make any changes and corrections. And to indicate areas which are sensitive and should not be re-produced.

Participant Code	PAR21
Title	Head of Business Intelligence & Analytics
Organisation Code	ORG10
Date	February 21, 2017
Legend	[xxx] implies redacted due to participant confidentiality

Person	Transcription
Eric	Eric thanked PAR21 and explained the BI&A organisation design research.
Eric	I understand that you've worked across a number of organisations as a BI&A practitioner. You are currently with ORG10, a Vietnamese multi-finance company and one where the practice of BI&A is evolving and not matured yet. While your previous role was the Head of Analytics for [domestic bank] in India. In your responses and comments, please feel free to draw from across your experiences and reference the organisational context as appropriate.
Eric	To start, can you give a brief background on your experiences with BI&A?
PAR21	I'm a statistician. I went into Analytics, known as Data Mining or Business Intelligence then, straight after college. I started with PwC, which was one of the top consultancy firms. I was providing consulting for multiple industries. I was working primarily in India, where Analytics was shaping up in those days. Businesses were beginning to outsource analytics to India and I was the first one to setup Insurance Actuarial Analytics for underwriting and loss forecasting. This was in 2001-2003. I had the opportunity to work with the chief actuarist of GE Insurance, who was based in the U.S.. I was involved in setting up the data collection / ingestion, consolidation and treatment, all the way to sophisticated actuarial statistical models. The work was done in Bangalore, India, and supporting the U.S. business processes. At that time, my understanding of Analytics was about building and executing an analytical model. I did not have a perspective on 'why' the need for the model. My job was focused on the technical aspects of the model development, and I was not concerned with how these models was being used in the business context. E.g. what are the business benefits? So I decided that I needed to do analytics in a business organisation so that I could get an end-to-end perspective. And so I moved to ORG3. That was around 2003. I stayed in ORG3 for 4.5 years. Started with ORG3 India, and thereafter, taking on a regional role to support the in-country Decision Management (i.e. Analytics) teams across Asia Pacific. I was thus working in an offshore capacity in India to support these countries. In that role, I felt that while I was getting the problems and context from the business, and solving it, I was not having ownership of it. I was not having a contribution ownership role in the implementation of the solution. How was the solution contributing to the business top line? How was it featuring in the overall business context?
PAR21	That was the time I had the opportunity to join [domestic bank]. That was in 2006. [Domestic bank] was just starting its Analytics journey. I had the privilege to set up the Analytics function from scratch at [domestic bank]. I was the first one. They had just invested in a datawarehouse. I stayed there for 10 years, and while I was there, ORG10 was known as a leader in analytics capabilities. It's also won awards for best bank in Asia, and part of that can be attributed to its analytics capabilities. In my current role with

ORG10, I am not building the analytics function from scratch. The analytics function has been in existence for the last 4 years. I have to embark on a transformation and change management process to upgrade the analytics capabilities in an accelerated time-frame versus what I was able to achieve at [domestic bank] over 10 years. So that's a summary of the work I've been doing so far.

Eric   At [domestic bank], you created the analytics function from scratch while at ORG10 you inherited it. How is the organisational reporting line different?

PAR21   It's quite different. At [domestic bank], when I first started, I reported into the Marketing Head. This was a reporting structure that was common in most bank during those days. In the first 1.5 years, I reported to the Marketing Head. Then as the contribution of the analytics function increased, we reported into the Retail Banking Head. The Retail Banking Head reported into the CEO of [domestic bank].

Eric   Just so that I understand, [domestic bank] has consumer and corporate banking divisions, and the Retail Banking Head is the equivalent of the Consumer Banking Head?

PAR21   Yes.

Eric   And the Marketing Head reported into the Retail Banking Head?

PAR21   No, the Marketing Head reported into the Retail Liabilities Head. In those days, Retail Banking was split into 3 sub-groups - Retail Liabilities, Retail Assets and Credit Cards. The heads of these 3 sub-groups reported into the Retail Banking Head. Marketing was a centralised function (for both Consumer and Corporate Banking), but for some technical reason, it used to report into the Retail Liabilities Head.

Eric   Can I assume that your Analytics function primarily supports the Retail Banking business? And so, you are now reporting directly into the main stakeholder of the line-of-business that you support?

PAR21   Yes, that is correct.

Eric   And in ORG10, that is also similarly the case? You currently report into the CEO of ORG10 because your analytics function provides support to his entire enterprise?

PAR21   Yes, that is correct.

Eric   Can you give me a perspective as to why it would be important to be a one-down to the business stakeholder of the line-of-business that your analytics function support? Does it matter if it was a one-down or 2-down?

PAR21   The change in reporting happened gradually in [domestic bank]. They realise that the work and output of the analytics function was customer-centric and could be better leveraged across the different Retail sub-groups if it was placed directly under the Retail Banking Head. While if it continued to report in the Marketing Head, the analytics output would be limited from the

Marketing standpoint. And that was exactly what happened. When analytics reported into Marketing, the Marketing person would consider how he could use the analytics output for branding rather than other possible uses across the business.

PAR21   But if you asked me what role did I play to influence the decision to change the reporting line, I would say I didn't do very much. It was just that the business realised that the output of the analytics function can be leveraged better across the business.

Eric   So when you were reporting into the Marketing Head, who in turn reported into the Retail Liabilities Head, the work you did was supporting across the entire Retail Banking business, right?

PAR21   Yes, that is correct.

Eric   What does BI&A mean to you? (I'm using the collective term BI&A to capture the spectrum of analytical activities & practices.)

PAR21   It is a way to provide relevant facts to support the decision-making process. For example, if the Consumer Banking head has to make certain business decisions, then I want to influence his decision-making with my data-driven facts and insights.

Eric   So would you say that it is about the decision outcomes rather than about the data?

PAR21   Yes, but the data needs to tell a story and communicate certain insights which makes it actionable, of which the outcome or impact can be monitored and measured, so that we can fine-tune the decisions.

Eric   Since it is about influencing or impacting the decisions within the organisation, what sort of decision rights or decision authority did you have, be it in [domestic bank] or ORG10? For example, what kind of approval authority did your analytics function have?

PAR21   Let's split this into 2 parts: does analytics take decisions on its own, or does it enable the decision process? At [domestic bank], the analytics function could not take a unilateral decision. Let me give you an example: during a review with the [domestic bank] CEO, he finds that the balance in the Checking & Savings (CASA) book is not growing. He had some adhoc suggestion that perhaps the bank should increase its acquisition. However, I took the call to analyse the problem deeper and develop a set of segmentations for CASA customers. We found that we couldn't just generalise that those with depleting balances were reducing their share-of-wallet in the bank - some of them were moving their re-balancing their CASA balances into investment products. So we had to address the problem at a customer level and understand the cause-and-effect of cross-selling. This turn out to be a much wider Retail Banking problem. This was an example where I could drive the decision, but I could not 'take' the decision. Our deep-dive analysis enabled the decision-making at various stages and points in time, and their expected impact - and that's how we could influence it.

Eric	But was it your personality that resulted in your ability to influence the decision-making or was some kind of 'authority' that was 'bestowed' upon you by the Consumer Banking head - e.g. "I would like the concurrence of the analytics function on this; I would like to see the evidence before I make a decision." And therefore analytics needed to be consulted.
PAR21	For [domestic bank], there was no authority bestowed upon me. When I joined [domestic bank], I wasn't that senior. I was the third person in an existing team of 2 in Analytics for [domestic bank]. So there was no decision authority at that stage. I was given a 'football' and a 'field to play in' and I had to decide how I wanted to play and who I wanted to play with. So I was 'selling' analytics to the senior management. I needed to make the analytics work relevant so that people will take interest, and I needed to have a story to tell from the analytics that would grab the seniors' attention. I chose to keep the analytics team separate from the reporting; people who built the datawarehouse had thought of using it to facilitate reporting. We felt that reports could eventually be automated. But how to interpret and leverage the dashboard, what problems can it highlight and address and what is the impact of solving it ... these are things with a story to tell, and this raises the interest level for analytics across the organisation. So I separated out the business-as-usual work like reporting from the analysis. We created 'insights newsletters' like a series of 'did you know' write-ups. So when we published the monthly dashboards, we would accompany it with the 'did you know' one-page story that would contain insights. Key stakeholders started taking interest in it. By the time I left [domestic bank], I had 170 people in my analytics team, which comprised of campaigns and reporting as well. I came up with the insights, I rolled it out, I track it and I have a separate P&L that I measure.
Eric	By the time you left [domestic bank], would you say that your approval authority had changed, because you took on execution. Did the campaigns require your approval or concurrence?
PAR21	Yes.
PAR21	We started to measure what % of decisions was proactively coming through analytics. We started at 0% - I could not influence anything initially. We also then instituted that any campaign that was at the customer-level needed to be analytically-backed; it required my sign-off or concurrence. All the campaigns were analytically driven when I left [domestic bank] and required my sign-off.
Eric	Did you own any policies? For example, Risk would own the credit and underwriting policies.
PAR21	Yes, it was the analytical campaign process - what products to sell to what customers.
Eric	Do you have similar approval authority now at ORG10?
PAR21	No. The ORG10 context is different. I've just joined for 6 months and we don't yet have any policies around analytically driven campaigns. We don't

have a customer-level perspective as of yet; everything is mostly done at an account level.

Eric   And that is something you are looking to define and own?

PAR21   Yes. Based on my experience, I believe the customer policy should be owned by the BI&A function. It defines what communications and offers the customer should be getting to ensure that the customer is engaged and makes the bank his/her primary bank. This is where BI&A function plays a major role and should be accountable for that.

Eric   Can you tell me about the senior management meetings you would attend?

PAR21   My exposure to senior management meeting in [domestic bank] started after I reported into the Retail Banking head. Then only did I get exposed to all the senior level meetings. I had proposed the formation of a customer committee to highlight all the customer analytics and its implementation. It had the participation of Risk, Sales, Branch Banking, the Consumer Banking head as well ... there were multiple stakeholders. I was also part of the Marketing Communications committee as the BI&A function contributed insights. I was also part of the Data committee.

Eric   Do you join the Retail Banking head or CEO meetings where they discussed strategic planning? And if so, what role did you play in those meetings?

PAR21   These strategic planning / business review meetings were held on a quarterly basis and I was part of that. At these meetings, I would have separate slots to present insights on each line of businesses.

Eric   Did you feel that your ability to provide analytical solutions changed because you were part of these meetings?

PAR21   Yes, it changed a lot. Prior to that, we were only working on critical business problems rather than from an analytical perspective where the problem could be better framed because of the perspectives we were getting from these meetings. We could now zoom in on the specifics of a problem rather than having it generic.

Eric   Eric then introduces the process of translating business problems into data problems into data solutions into business solutions.

Eric   Do you experience ambiguity or equivocality when business problems are being translated into data problems? For example, things could get lost because the information is being from the business stakeholder to his/her 1-down who then in turn passes to your 1-down who then explains to you.

PAR21   Yes, that is the case. For example, the Marketing person would interpret the business problem through his marketing lens, and we would end up working on that specific perspective. But when we could get a broader context to the problem, we had a better appreciation of the origins of the problem.

Eric   So would you say that as an outcome of having access to these senior management meetings, your analytical output became more relevant?

PAR21   Yes, we could not only understand the problem, but also the context, and also why it was important to solve the problem at this point in time. We could create solutions that were therefore more relevant.

Eric   How important is it for your BI&A team to be physically near to the lines of business that they support?

PAR21   I find that physical proximity does matter a lot. Let me give you an example of when I was with ORG3. I was working from Chennai on the balance consolidation problem that you (Eric) had given to us to solve. I saw this as a similar problem that I had solved for the India market, and so I applied the same model to the Singapore context. I could get a reasonable fit. But then you asked me why I was so focused on the fit of the model rather than looking at what was driving the prediction. You asked what was driving the rank ordering, and whether we had looked at all aspects of the customer. And that changed the way we were looking at analytical models. And that's when we relooked at whether price points should be an input into the model, whether the demographics being used were regularly being updated, what kind of transactional variables were being considered. These were questions around customer's interest and preference. It was thought provoking and gave us pause to consider how analytical models could be looked at from a different perspective. It became more interesting to understand what was going into the model rather than the computational output of the model. Because the output can always be improved using various statistical techniques and transformations. That made me realise that the business part of analytics was important. I could not solve that problem completely being in Chennai. I had to travel to Singapore for 10 days to sit with the business, and that completely changed the final solution.

PAR21   So same thing when I moved to [domestic bank], I saw that if the BI&A team was not seated next to the business, the analytical perspective would not be complete. So I divided my team up to embed them with the lines of business that they supported, which was in multiple states, and I personally had to travel to meet with my team. I even encourage my BI&A team accompany the branch relationship managers during their meetings with customers, or to listen in a telemarketing conversations, all so that they gain a deeper context on customer interactions. This is to ensure that BI&A solution was not distant from the ground realities. So, at the top of my mind, BI&A members must sit next to the business.

Eric   So you had a team that was decentralised and embedded with the business. But one can make the argument that centralisation increases the BI&A function's capacity to solve uncertain problems through process formalisation and increased shared knowledge on data access, and also increases the function's efficiency. How did you balance this with the decentralised model that you had?

PAR21   There are 2 aspects to this. Firstly, the need to conceptualise and understand the problem. When you are conceptualising a problem, every problem is unique and you can't put a generalised solution around it. What we could generalise was the knowledge about the data, knowledge about the customer information. And so we keep our data centrally. Similarly for the data and analytical tools used. What we decentralise is the problem-solving

capability, which is focused for a particular business. Implementation of the output was decentralised. And I would travel to my analysts' locations to review their work. These reviews are done together with the business, and we could then improve the work based on best practices and incorporating a broader business context.

Eric   So in terms of the teams that you had within your BI&A function, you had a business-facing team who would interact with the lines-of-business, take on the problem and frame it; and these teams are co-located and embedded with the lines-of-business. Then you have a centralised team that is overseeing all the data management and data models, and I'm assuming they are also handling the reporting. What about campaigns? Was this a centralised team; and the business-facing team would design the campaigns and pass it on to this central campaign team for execution?

PAR21   We experimented with multiple structures over the years. The structure evolved around the types of problems we needed to solve. For example, we had a team focusing on customer acquisition and cross-sell. But all the stuff that could be automated, like reporting, I centralised it. So over time, we had multiple teams built around specific 'business problem domains'. At that time, we were not having too many products, so we could structure the team in such a way. And this was also primarily influenced because of the reporting into the Marketing head, and the lens was 'problem domain' specific. But when I reported to the Consumer Banking head, these teams evolved to align with the organisation's lines-of-business, and that's when they became decentralised and co-located with the lines-of-business. The reporting team was not decentralised. I had 2 teams for campaign - one to conceptualise and structure the campaign, and the other to execute the campaign by extracting the data, applying the scores, and send out the communication to the customers. Campaign execution team was centralised. Campaign design team was decentralised.

Eric   Was the advance modelling team [of [domestic bank]] centralised?

PAR21   When we started, it was centralised. Then I decentralised it. So each business-facing team have some statisticians. But we don't start with sophisticated modelling solutions first. Rather, we find practical solutions, and if there is a need for sophisticated modelling, then we do it.

Eric   When you translate a data problem into a data solution, what sort of problems do you face? Is there a lot of ambiguity in the choice of solutions - e.g. segmentation, predictive models, etc. or is the solution mostly obvious once you frame the business problem into a data problem?

PAR21   It's not particularly obvious what the solution would be when the business problem is first described. It's very exploratory in the beginning. We dimensionalise a problem and take a dimension which we solve with a minimum investment of time and resource, and is actionable and implementable. We start with the key stakeholders - what am I trying to solve? To dimension a problem requires a lot of iteration with the business to understand the core objective(s) and what is getting influenced through this data solution.

Eric	So a business problem has multiple dimensions and you never solve it entirely, but rather you solve it iteratively and incrementally; you take one dimension and go through an iterative discussion with the business, do some back-testing and scenario-building, and present a set of possible impact to the business stakeholder; business agrees and you take that forward, and then you keep layering and adding incremental dimensions to that same business problem, and over time, solve it in its entirety?
PAR21	Exactly! I have found that the business heads lose patience when we try to solve a problem in its entirety, because it takes too long and consumes too much effort. Unless everybody has a similar level of confidence in the solutions.
Eric	How do you know that your data solution will translate well into a business solution? There are many things to consider in a business solution, like the operational and communication processes, the customer experience, etc.
PAR21	Let's consider the example of a business problem of increasing the average number of products per customer. Wells Fargo is famous for their benchmark of 7 products per customer. So cross-selling is the approach, but the time taken to build a cross-sell model for all products may take a long time, even though it may be the best solution. I therefore explore whether we can do some quick segmentation and profiling to understand 1st product into 2nd product, and I roll it out and measure the outcome. I try to get early success without making the solution too complicated. And I would be able to move the needle on average product holding by some extent.
Eric	Are you saying that when you translate a data solution into a business solution, it is also an iterative process that gets refined over and over again, incrementally?
PAR21	Yes.
Eric	Is it because of ambiguity in the solution, or is it because you are getting more information about the solution and therefore incrementally making it better?
PAR21	It could be both. When the problem statement is very clear, we can have an approach of incrementally better solutions over time. The other is that I'm improving on the original problem statement - let's say I've addressed the cross-sell model, but now I want to improve the productivity of the telemarketers to complement it, and this may result in an incremental analytical solution.
Eric	One can argue that there are many dimensions to solving for telemarketing productivity - from leads prioritisation, to skillset improvement, to reducing booking cycle time, etc.
PAR21	That's correct. The approach will depend on who is your stakeholder and their solution preference. Some are willing to wait to see the larger solution. Some are on a learning mode and prepared to experiment - in that case, an incremental solution approach may be best.

Eric	For each of the embedded business-facing teams that you have in the various states, do you have a team lead? And if so, are they are 'part' of the management team for the line-of-business? Meaning that attend all the management meetings and is treated as of the seniors in the line-of-business?
PAR21	Yes, absolutely.
Eric	If the analytics lead was not 'part' of the management team of the line-of-business, then his ability to make of the problem is also impeded?
PAR21	Yes, absolutely. The reason we moved to a decentralised embedded model so that the analytics team can be more integrated with the business, and their ability to influence the business would increase multi-fold. This decentralised approach resulted in the analytics function contributing to over 26% of the retail banking revenues as we were able to influence the campaigns with our analytical insights and design.
Eric	So this % revenue contribution was part of your performance scorecard?
PAR21	Yes.
Eric	In [domestic bank] and ORG10, what do you hold in your performance scorecard? Do you share the business financial goals in your scorecard?
PAR21	In [domestic bank], we would carry the financial targets from analytically-driven campaigns. We have not yet implemented the same in ORG10.
Eric	How important is self-help MIS in [domestic bank] and ORG10? The reason I ask this question is because I'm considering the notion that decision rights and information/knowledge must co-locate. And with self-help MIS, the business is trying to bring the information/knowledge to them rather than to give decision rights to the analytics function.
PAR21	I have different perspective on that. Self-help MIS or BI has been discussed for a long time. Self-help BI help anyone to understand the key metrics for their business at their fingertips - how has the business been performing compared to previous periods, what is the productivity like, etc. But I doubt that self-help BI can lead to better decision-making or solve a problem. We were already producing these MIS/BI reports even before self-help. But there's too much information to consume and it may not help in understanding what information is useful for what decisions. And that's why the BI&A function plays a role in problem-solving.
Eric	In [domestic bank], have you done any outsourcing or offshoring of your analytics function?
PAR21	I have done outsourcing in [domestic bank]. I have a very different perspective on outsourcing. In analytics, the availability of information plays a critical role. What kind of information do I need and what sort of format it needs to be presented in so allow me to make better decisions or solve problems at a faster speed? It's not about problem-solving, but just about the information required. So I have outsourced the information preparation work - getting 3rd party data, mapping data across the bank, etc. I have 3 external

agencies working for to put together the data, checking on the validity of the data, or preparing it for model-building purpose. So I free up the analysts' time to interact with the business and problem-solve. Because the data preparation portion can take up a lot of time.

Eric   And that outsource agency need not be proximally close to you?

PAR21   Yes, they can be anywhere. They just need to have access to our systems and the data.

Eric   Let's say an outsource agency has better talent. What would you be prepared to outsource and what would you not?

PAR21   Given our believe that the analyst performing problem-solving activities need to be co-located and embedded with the business, it is not possible to outsource that aspect. When I joined [domestic bank], they had a datawarehouse but no analytics team. They would outsource model-building. But I found the variables used in the model did not make business sense. Personally, I have not seen much success in outsourcing business-centric analytics. But when the task is well-defined, it can be outsourced. I have outsourced those activities where I had a deficiency in IT skills. I have also outsourced when I needed to acquire new skills; in such a case, I would engage with a partner to help me to build that capability in-house. When we started big data and social media analytics, my team did not have the skills, and I did not yet understand the financial benefits. So it was something I would outsource. I have also outsourced when I faced capacity constraints. For example, I did not have enough capacity to roll out a series of campaign and so I would outsource a few of the campaigns. But that was a short-term arrangement.

Eric   Did that outsourcing work out well?

PAR21   It worked out fantastically. For example, during festive seasons, we would design all the campaigns but outsource part of the execution because we didn't have enough capacity. Or even location-based studies which we've outsourced because we didn't have those skillsets.

Eric   So that's all the questions I have. Any last words you would like to add?

PAR21   We've covered mostly on [domestic bank]. I would like to add a few things about ORG10. In the case of [domestic bank], I was building the BI&A function from scratch. But in ORG10, I inherited it and had to transform it.

Eric   I have a proposition to suggest. In the case of [domestic bank], you were successful because you had also built up your campaign management capability. For ORG10, the business still has decision rights on their campaigns and they decide how they want to execute it. My proposition is that as an initial step to driving analytical maturity and influence, the executional piece must come first; the ability to influence execution, the ability to centralise the campaign process is paramount.

PAR21   That is correct. I am working in exactly those lines in ORG10, and have structured my team to centralise campaign execution. These are decisions I

have already taken. And we would use the datawarehouse as the single source for all our campaigns. We are enhancing the datawarehouse to incorporate a customer-level view and that's some ways to go. We've automated all the regular dashboards already to free up bandwidth for problem-solving.

Eric   Eric thanked PAR21 for his time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections.

Participant Code	PAR22
Title	Country Head, Decision Management
Organisation Code	ORG3
Date	March 4, 2017
Legend	[xxx] implies redacted due to participant confidentiality

Person	Transcription
Eric	Eric thanked PAR22 and explained the BI&A organisation design research.
Eric	If you can start by introducing yourself, your background and experiences.
PAR22	My name is [xxx] and my current role is the Head of Decision Management (DM) for ORG3 Indonesia. I've been in DM for the last 9 years. I started in DM Indonesia as a campaign analyst, and then moved to advance analytics and then to performance management. And then I spent 3 years doing analytics with DM ORG3 Korea and just got back. It was a very different experience working in Korea vs here as ORG3 Korea was more mass banking while ORG3 Indonesia is more affluent banking. I started my career with a software house for 4 years. I was a programmer - I understand Visual Basic and SQL and such. I became a project manager with the software house, and then I moved to EY where I did technology assurance, mostly to support financial audits. I did 2 years with EY. While in EY, I learnt how to establish an IT function. I studied about change management, how to build a server room, how to ensure proper security for software, etc. So I came from a very technical background. When I joined ORG3 as an analyst, my work was also quite technical. My passion these days is in Analytics.
Eric	How many years has your DM ORG3 Indonesia been established?
PAR22	I believe the function was established the early 2000's, so it's about 15 years.
Eric	I'm going to interject a little bit as I know something about this. You are 5th DM head. Started with [xxx], then [xxx], then [xxx], then [xxx] and now you.
Eric	Where does DM report into?
PAR22	DM reports directly into the Consumer Banking Head (CBM) of ORG3 Indonesia.
Eric	Why is that?
PAR22	I had asked several CBMs in the various countries as to why DM reports directly into them, and they shared that DM needs to be an independent function, and they expect DM to become their 'eyes' to give them the feedback that the business is doing their job.
Eric	How is that different from the Risk or Finance function, which are also 'eyes'?
PAR22	I think DM is unique because it works closely with the business. We are involved in the execution of campaigns, and we understand the operational

process around sales, customer interactions, call centres, etc. We are more on the ground than Finance or Risk.

Eric   What lines of business does your DM support?

PAR22   We support all the product lines of business in the consumer bank.

Eric   You don't support Finance or Risk or Operations?

PAR22   We co-work with them. Risk has their own data. We provide data to Finance, and do some analytics around rewards reserve.

Eric   In ORG3, you may call it Decision Management (DM) while in other organisations, they may call it Decision or Data Science. I'll use the generic collective term BI&A. Given your 9 years in this domain, what does BI&A mean to you?

PAR22   I look as 2 parts - BI is more about operational support - e.g. reporting, insights in fixed formats, campaigns, and data provision. In ORG3, DM is the guardian of (customer) data as we are the only function who have complete access to it. The analysts function (BA) is the core function of DM; it's the face of DM, and it determines how good the DM function is.

Eric   But what does analytics mean to you?

PAR22   It's about translating insights into recommendations. Every time the business has a problem, we are expected to provide them some kind of solution based on both our knowledge of the data and the business. Because of our access to the data, I would say we may know more than the business managers - they rely on us to give some advice.

Eric   Is that how ORG3 views BI&A as well?

PAR22   Yes, that's how ORG3 defines it as well.

Eric   As of head of DM, do you participate in senior management meetings?

PAR22   Yes, I participate in the weekly CBM one-down meeting. I also attend the weekly Cards business meeting; the CBM attends that one as well. I also attend the weekly Retail Bank business meeting. I also lead the data governance council meeting. Data governance is focused on data quality assurance. On a monthly basis, we need to report to the CBM on any incident regarding data quality with a view for resolution.

Eric   In these CBM one-down meetings, Cards business meetings, Retail Banking business meetings, what is the role that DM plays?

PAR22   The CBM looks to DM for answers to problems that require data mining. That typically covers all problems.

Eric   So the role that DM plays in this meeting is the 'source of answers'?

PAR22   Yes, that is correct.

Eric	Does your DM have decision rights / approval authority on certain activities?
PAR22	Yes, we have approval authority on campaign - we approve the targeting criteria (which we typically design as well) and financial estimation of the campaign before the final approval by the CBM. We also approve the pay-outs on variable sales incentives; we also do the calculation.
Eric	Are there other activities that require DM concurrence?
PAR22	Pricing would be one. While we have yet to start a formal pricing committee in Indonesia, in Korea we have one. So any pricing change on a product requires the concurrence of the DM head. Our concurrence is also needed for new product launches as we are involved in the construction of the pro forma financials.
Eric	Does your DM own any policies?
PAR22	Yes, we own a policy on our standard operating procedure that includes reporting and campaigns. We also own the customer contact policy.
Eric	DM has the final say on anything that has to do with campaigns?
PAR22	Yes.
Eric	When Risk or Finance needs to look at certain numbers, do they need DM concurrence?
PAR22	It depends. Not for everything but sometimes they do. Risk owns the NCL and delinquencies, and don't need concurrence from DM. But if they are developing new Risk policies, they usually seek out DM concurrence on potential business impact.
Eric	How would you define success for your DM function?
PAR22	Success is when the business seniors seek us out for all important decisions, and the product managers cannot make decisions without our feedback.
Eric	What are the performance goals of your DM function?
PAR22	I carry all the business financial goals in my performance scorecard - I co-own the numbers. I also co-own the business targets on digital initiatives. I also carry goals on building specific DM capabilities, building new models, launching new dashboards, enhancing controls.
Eric	Do you track shadow revenue - revenue generated through analytical decisioning process?
PAR22	We currently track shadow revenue on a piecemeal basis. We do track most of the campaign programs.
Eric	For those business and financial goals that you co-own, how do you know your shared of contribution?

PAR22	For campaigns, we would be able to track the performance and therefore attribute that to DM.
Eric	Are these performance goals aligned to your DM function's capabilities?
PAR22	I am able to influence the country's business and financial goals. But there are goals from the region which I feel are not achievable given the timeline and resources we have. For example, it they ask us to build 10 models this year, we can't do it.
Eric	How important is self-help MIS / reporting to the organisation?
PAR22	We just launched Cognos as a self-help tool for the business in several markets, but I haven't heard that it's been widely used. We launched it in Q4 last year for Indonesia but we have not socialised it with the business. And I haven't heard the business asking for it.
Eric	So self-help is driven top-down but the lines-of-business are actually not asking for it?
PAR22	In Indonesia, that's the case. In Korea where we have yet to launch Cognos but heard about it, the business is pushing for its implementation.
Eric	Why is that the case?
PAR22	It has to do with the level of analytical maturity of the business / product managers. In Korea, the business like to see and play with data, whereas in Indonesia, they see it as something that DM should provide to them.
Eric	In Indonesia, they don't see it as their job to look at the data and they just want DM to tell them what to do?
PAR22	Yes, but maybe it's a good problem for DM. So in Indonesia, the users of Cognos is DM.
Eric	How is your DM function organised? What is the size of your team? What are the sub-teams? What are their roles and responsibilities?
PAR22	DM is comprised of 4 sub-functions: Analytics, Campaigns, Data Capability & MIS, and Incentives. I have 15 people in DM. Incentive was set up to improve sales performance through better incentive designs. That capability has since degraded to just incentive computation - it's now more a support function than an advisory function. I have 2 people in Data Capability & MIS. Data Capability focuses on data quality - we have a rule that only 1% of data can be inaccurate, and that's being tracked closely by the regional team. The Data Capability person tracks data quality and manages the data governance council. The MIS person manages the MIS request coming into DM, and he is the bridge to the DM offshore centre in India. All MIS is being generated by this offshore team, unless it involves Personally Identifiable Information, then the country DM team would generate it in-country.

PAR22	The Campaign team executes all the campaigns, both batch and real-time. We get the request from business, we review it, we give feedback on the targeting criteria and mechanics, execute and track it.
PAR22	The Analytics team is the front-line of DM. They need to know about campaigns, MIS, data quality and incentives. They need to have strong business and P&L knowledge. I want my Analytics team to provide good and proactive feedback to the business that address the P&L outcome.
Eric	Does the line-of-business interface directly with all these 4 teams?
PAR22	Yes. The sub-team heads are the interface points with the business.
Eric	So if I need to run a new campaign, do I go to the Analytics team first, or directly to the Campaign team?
PAR22	Business should come to the Analytics team first, have a discussion where the initial sizing and targeting criteria gets worked out.
Eric	So the Campaign team doesn't do that work?
PAR22	They don't. The Analytics team will work on the design and then pass it over to the Campaign team for execution.
Eric	Who passes it over? The analyst or the business?
PAR22	The business will pass it. That's the part I'm looking to fix as the passing should be done internally.
Eric	So the business has to interface with 2 sub-teams today to get campaigns done?
PAR22	Yes, there is that disconnect.
Eric	How do the 4 sub-teams interface with each other?
PAR22	They are somewhat disconnected and operate independently. I'm trying to fix that by having regular meetings with the sub-team heads. And I join each sub-team's weekly meeting to play the role of bridging the sub-teams together.
Eric	Do your sub-team heads sit in on those Cards and Retail management meetings that you spoke about earlier?
PAR22	The MIS team head is not participating in any of the meetings. The Campaign team head attends the monthly campaign meeting where the product and marketing managers attend - to discuss the campaigns for the next month. While the Analytics team head is invited to all meetings where the business wants to roll out a new initiative. I've asked the Analytics team to do a weekly touch-base with their business stakeholder counterparts, while I touch-base with the Cards and Retail business heads. And I want my Campaign head to join.

PAR22   The team that interfaces most frequently with the business is the Analytics team and Campaign team - equally.

Eric   Is your DM function physically seating together? Are they co-located with the lines-of-business?

PAR22   We are on the same floor as the Retail Banking and Cards & Loans business. So we're very close. The in-country DM team is seating together. There is still the India team. I am trained to view DM team as both the local and India team. We have 3 staff in India dedicated to support MIS for us, and 2 for campaigns. They are extensions of my team. We have a formal weekly call with them and daily interactions. They've visited us (onsite) once but not on a regular basis.

Eric   How do you work with IT today? Is IT a key partner for you?

PAR22   IT used to be a key partner for DM when we were going through the regional system standardisation project.

Eric   Most of the stuff you do today doesn't require IT? You can do it yourself?

PAR22   Yes. In fact, we work more closely with the regional IT team than the country IT team because the data is held regionally.

Eric   If you need to get pieces of data, how does that process work today?

PAR22   Since our last regional system and datawarehouse upgrade, most of the data that we want is now in the datawarehouse. But regional IT would be our point of contact to get more data.

Eric   You are only offshoring today but there's no outsourcing?

PAR22   Yes, offshoring but no outsourcing.

Eric   What DM activities are you currently offshoring?

PAR22   Campaign and MIS.

Eric   Why?

PAR22   It's a top-down regional initiative. Primarily a cost reduction exercise. The other reason is to allow the country DM teams to focus on Analytics, because they are offshoring the operational parts of DM. They believe the operational parts of DM are low value and can be offshored without any impact.

Eric   Is that true? Have they achieved that outcome to have more focus on Analytics?

PAR22   Since giving access to country data, the regional team is now engaged in Analytics as well. We are seeing top-down initiatives from the region based on work done by the centralised team. It's sometimes frustrating for the country because we don't have the background and are asked to just execute.

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It's a problem we need to resolve with the regional team, because there are disconnect not only with the country DM but also the country product teams.

PAR22   Speed of delivery is an issue for the centralised Campaign and MIS team. Because they are still learning. It's not been a year yet since we've offshored. We offshored MIS 4 months ago, and campaigns 2 months ago.

Eric   While it's still going its maturity phase, are you seeing benefits?

PAR22   For the small-scale campaigns and MIS, it's been useful to offshore as the in-country effort is not worth it. But for the more complex campaigns and MIS, we end up spending more time explaining the logic and business background to the offshore team. Because the offshore team is junior and new to ORG3. Such complex campaigns and MIS require discussions with the business, and that's easy to do in-country. Now we have to accommodate all parties' (business, in-country DM, offshore DM) points of view, and it doesn't always lead to resolution. I've seen projects getting delayed because of such miscommunication.

Eric   If you had the option to choose to offshore, would you do it?

PAR22   I would offshore simple campaigns and simple MIS. But I won't offshore the entire campaign or MIS.

PAR22   Why would I offshore? Because having someone seating in DM doing fairly low value work is frustrating for that person. They become envious of their colleagues who are doing higher value work. Reducing that personal interaction and visibility will help to reduce the professional envy.

Eric   Eric then introduces the process of translating business problems into data problems into data solutions into business solutions.

Eric   In the translation of a business problem to a business solution, where are experiencing the most ambiguity or equivocality?

PAR22   Business tries to find all answers within the data, but sometimes you can't. Problems like "how do you increase sales" can be quite ambiguous / equivocal. Even simple questions like "should I continue with this merchant partnership campaign" can raise questions about whether it's moving the needle on the business strategically. There are broader dimensions to the problem, like does it change of the behaviour of the customer, does the program make them more engaged. And given all the background noise of multiple promotions happening at the same time, it's very hard to isolate the specific data points.

Eric   But aren't these uncertain problems? You are not able to answer these questions because you don't yet have the information. In some cases, you may never have the information about it because its mixed in, but you can always attempt to isolate or proxy the information. It's not ambiguous, it's just that you don't have enough data to answer the questions.

PAR22   Yes, that's why we should do lots of test / experiments since we cannot find the answers from our existing data.

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Eric	But are problems ambiguous or equivocal?

| PAR22 | Actually yes. We have found that the request that comes to DM is sometimes different from the original request from the business seniors because things get lost in translation when their subordinates interpret it and pass on the requests. |

| Eric | So what steps can you take to resolve this issue? |

| PAR22 | The weekly senior management meeting is helpful to get alignment and confirmation, and the right context. We also need to touch base more with the senior product managers. Having regular meetings is important. |

| Eric | Do you experience that the business, despite you understanding the problem to solve, keep iteratively asking you to explore different scenarios? Each time you come back to them, they ask for more? |

| PAR22 | Yes. |

| Eric | So do you then already prepare these alternative scenarios upfront without the business first asking for it? |

| PAR22 | It depends on how well the DM analyst interprets the problem. Sometimes the business is not very clear on what they want to achieve. Everyone has different points of views. Even when we are clear about the problem statement, when we come back to them with the analysis or solution, they have different questions. And in answering those questions, everything changes. So the analysis 'evolves'. It may start with a small problem to solve, but based on the analysis, it may end up solving a different or larger problem. It's very iterative. |

| Eric | Because of the iterative nature, is it important that the DM analysts are physically close to the business? |

| PAR22 | Yes. If the DM analysts were all in India, it would be difficult. I find that you can get more when you have face-to-face meetings. You might mi-interpret when it's just a phone conversation. |

| Eric | In translating a data problem into a data solution, is there a lot of equivocality? Or is it obvious what the solution should be once you see the data problem? |

| PAR22 | Even the simple thing of pulling out a data point, different analysts may have different logic or different interpretation. But I also see a lot of equivocality in the choice of data solution, even in Korea, and more in Indonesia. It seems a trend where the business wants to build a model as a solution for everything. But it's a function of business maturity and analyst maturity. As the analyst matures, he has more ideas on the kinds of solution options he can take for a particular problem. |

| Eric | Is it because of experience? |

PAR22   I believe it's experience. I don't think you can train for that.

Eric   Does working vintage help?

PAR22   Not really. In Korea, some of the analysts have been working in DM for 10-15 years, but still don't have strong ability to look at alternate solutions.

Eric   So what is the real issue?

PAR22   I think it comes down to practice and experimentation. The analysts must have the opportunity to keep trying different kinds of solution to learn.

Eric   In reducing the equivocality in data problem to data solution, is it important that the analysts are physically close to the business? Is it important to have access to seniors? Is it important that the analysts are all seated together?

PAR22   It's all important. To implement a solution, you need to get buy-in from the seniors. If the seniors want to build a model, then it affects how you would approach it; proposing a different may be difficult. But the choice of model can be improved based on the closeness with the business seniors as they can give you feedback.

Eric   Do you feel that your in-country DM team has more ability to influence the solution than your offshore team?

PAR22   Yes, that is true. The regional analytics team drives a top-down solution based on their discussion with the regional business seniors, but it doesn't always fit the markets as each is different. Being in-country, we can see how the solution should be adapted, but being oversees, they can't see it.

Eric   So the choice of data solution is contextualised to the market, and being close to the market is important?

PAR22   Yes, I have an example. A few years back, we wanted to develop a solution for insurance and reached out to the offshore analytics team in India. It was scientific exercise. They asked us for the problem and the data, build the model, and asked the local DM to present the model to the business. The local DM team got stuck. The local DM didn't understand the solution to be able to present it. The local DM felt it was too statistical and was not sure if it could solve the problem.

Eric   Was the solution incomplete or irrelevant?

PAR22   We couldn't explain to the business why the model variables were such. They had high correlation but we didn't know why. It was not intuitive to the business. And we lost the buy-in from the business.

Eric   Is there a lot of equivocality in translating a data solution into a business solution?

PAR22   It depends how good the data solution is, and it can connect with the actual business process and operating environment. The offshore solutions tend to have these issues where they cannot translate into a business solution. I don't

see that issue with the local team. Because the local team would involve the business stakeholders upfront. We work with the business iteratively to arrive at the agreed solution by the time we have a data solution and have clarity on how it can be implemented in the business.

PAR22   In Korea, the offshore team is able to give more relevant and implementable solutions compared to Indonesia. In Korea, we work with a smaller group of business stakeholders and there's less difference of opinions. In Indonesia, the business execution team have their own opinions and may not agree with the business seniors on the solution. We needed to get additional buy-in from the business execution team even after we got buy-in from the business seniors; and things get stuck.

Eric   Because the business seniors didn't resolve the various points of views with the execution team upfront?

PAR22   Yes, that is correct. And sometimes, after the solution has been built, the business change their minds and support the views of the business execution team. It's happened several times.

Eric   How can you improve these situations?

PAR22   I think the business interface with DM needs to reside in-country. Only the execution parts which have no ambiguity can be offshored. The other alternative to build a larger in-country team, but split it into 2 separate functions - the execution part versus the decision part. And I think that may work better since both functions are in-country. There's not much cost arbitrage opportunity for a low-cost country like Indonesia, and we don't have shortage of executional skills.

Eric   Isn't that the original design of DM where you had MIS, Campaign and Analytics verticals? Are you saying we should just hardened this distinction?

PAR22   It's more than that. Today, the Campaign team feels they are part of DM. But the DM leadership vision is around enhancing Analytics, and so they feel like 2nd class employees. In telco, the have data engineering teams that focus on data preparation and reporting while the Analytics team focus on the solutioning and problem solving.

Eric   Eric thanked PAR22 for his time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections.

Participant Code	PAR23
Title	Country CEO and Head of Consumer Bank
Organisation Code	ORG3
Date	March 7, 2017
Legend	[xxx] implies redacted due to participant confidentiality

Person	Transcription
Eric	Eric thanked PAR23 and explained the BI&A organisation design research.
Eric	If you can start by introducing yourself, your background and experiences, and in particular your experiences interacting with BI&A functions.
PAR23	My name is Han PAR23. I've been working in the bank for 25+ years. 19 years in Corporate Bank and 7 years in Consumer Banking. In terms of experiences with BI&A functions, on the Corporate Bank side, we had looked at the likelihood of deposit attrition during the global financial crisis. And on the Consumer Bank, BI&A is life-blood of what we do - looking at behaviour of customers, product propensity models, and understanding how we can use data in a much better way to ensure that our teams can perform better, our campaigns can perform better, and we can attract customers better.
Eric	How long has your BI&A team been established?
PAR23	Decision Management was officially put together since 2004. So that's 13 years.
Eric	What lines of business does your BI&A function support?
PAR23	DM supports Cards, Unsecured Loans, Retail product lines. Operations have their own analytics function, and so does Risk, Fraud and Collections. There are also analytics teams supporting AML (anti-money laundering).
Eric	Who does your BI&A function report into? And why?
PAR23	It reports into the Customer Franchise Head. Essentially, it is to allow for greater insights from Marketing, Digital Banking (which is the interaction we have through our digital channel), Complaints Handling, Customer Experience. Information from these domains thus flow into BI&A better. So having a single head (i.e. Customer Franchise), I should be able to see the end-to-end from generating a campaign right through to complaints management. And then the last one is on Training - the effectiveness of training that has been done vs the complaints that we get.
Eric	Is there tension whether for example the Cards team would rather have their own analytics team?
PAR23	There are. But within DM, they are already structured to provide support to these businesses. But if you have it embedded into each and every one of those business, you can't have a total customer view which is important.
Eric	I'm using the term BI&A in a collective sense to capture the broad spectrum of analytics. What does BI&A mean to you and your organisation?

PAR23	I can broadly classify it into 3 things: (a) it provides insights on customers' behaviours, (b) it gives us a probability view of future events like why a customer would want to buy a product or leave, and (c) the entire campaign management that comes out of the analytics.
Eric	How important is this execution piece (campaign management)?
PAR23	It's extremely important because that's the one where you can make mistakes and impact customers. And it's a way to validate whether the propensity models built are meaningful.
Eric	Is your BI&A function a part of your leadership and planning meetings?
PAR23	They are. And the role that play is to provide insights and guidance on some of our initiatives through the data.
Eric	Do they also engage in scenario building?
PAR23	Less so around scenario building but more so on the objective of what needs to be done. And therefore working with the business to answer the 'what' and 'who' to target to achieve that objective. As an evolution, we certainly want to bring in Big Data, and when that is done, the insights that the BI&A function can provide is taking in the environmental information, giving us thoughts about new avenues of previously unconsidered opportunities. Possibilities about the trends that are coming up. Possibilities about the dangers that are lurking in our system without human intervention. Sort of an extra pair of eyes based on the gathered data.
Eric	Does your DM have approval rights?
PAR23	They sign off on whether a campaign should go ahead based on the expected returns.
Eric	What about new product development, pricing - do they have any decision rights or are they consulted in those cases?
PAR23	Their models will drive the decisions.
Eric	They don't take the decisions but provide inputs and someone else takes those decisions?
PAR23	Correct.
Eric	What processes must your BI&A function be consulted on?
PAR23	All campaigns, all new products, all collection strategies (the Collections analytics team), insights around marketing surveys such as net promoter score (NPS), customer acquisition.
Eric	Do they own any policies?

PAR23   They own the customer contact policy. And, not that they own it, but they are the guardians of the returns that we want to see out of campaigns.

Eric   How important is self-help MIS to your organisation?

PAR23   We try to give people tools, but tools alone are not enough. We find that self-help will only work if the users themselves have some sense of analytical flow in their thinking. If the users don't understand how data can be used and linked to support their thinking ... being able to come up with the problem statement doesn't mean they know how to use the tool to answer the problem statement.

Eric   You feel that most of the businesses don't have this capability to leverage self-help?

PAR23   The junior ones don't have the ability, but they are the ones who need to use the tool far more. We need to train them first to think about how data can help them, how the manipulation of information allows you to get to an answer that you want.

Eric   So self-help is available, but is the business pushing for more? Or are they saying because the BI&A function is already there, they'll just go to them?

PAR23   It's a function of how effective the BI&A function is. If the BI&A function is more effective in coming up with the answers, then of course the business would prefer to go to them rather than self-help.

Eric   How is you DM function organised today?

PAR23   It's gone through a few rounds of evolution. Those core models that are common across markets are done centrally in Bangalore. That allows for success transfer from one market to another. The in-country analytics team would spend time exploring on problem statements with the businesses. In some instances, the analytics team may initiate hypotheses based on the data that they are seeing, and go to the business with suggestions. And that's the value-add beyond the 'factory approach' of churning out the models.

Eric   I understand you have teams in DM that face-off with the business. But you also have Campaigns and MIS. Do these latter face-off with the business?

PAR23   Campaigns does face-off with the business from an execution standpoint. They take the models and advise the business on how many customers will be targeted and do the campaign scheduling and such. But even that work is now undergoing centralisation into the offshore team in India. MIS is also centralised into India.

Eric   Is it more useful to have dedicated face-offs for the Analytics team? Since Campaign and MIS are centralised teams, the Analytics can also be organised along that way.

PAR23   I think the difference is the insights you can get from a dedicated Analytics team, although there will be some analyst who would look right across at a customer level. The verticals (i.e. dedicated face-off Analytics teams) helps

to get some sharpness to the insights because of deepened domain knowledge.

Eric	How big is your DM team?
PAR23	The team is about 18 people, with 6-8 in the analytics sub-team.
Eric	Is the DM team co-located with the lines-of-business that they support?
PAR23	DM sits on the same floor as the Retail Bank. The Cards team sits one floor down. DM sits as one team; but they don't sit 'inside' Retail Banking.
Eric	So DM is physically closer to Retail Bank than Cards. Does it impact the work they do for these lines-of-business?
PAR23	No. It doesn't matter. But if they were in a different building, then maybe yes.
Eric	What was your overall impression when working with your DM team?
PAR23	A lot of it depends on the ability of the head of the team. Very much influenced by that. If he head is a poor manager, then we see a lot of attrition and lose of analytical talent. It's also the head that provides the vision and excitement, and inspires the team to think. But if the head doesn't have that quality, then even if the analysts were interested in doing things while the head may not be, then the analysts will tend to be more reticent. Then after a while, the business people will complain about the DM team.
Eric	Things like centralisation, de-centralisation, analytical tools and process are not as important?
PAR23	No. Because if the DM leadership has a view, then he/she will be able to maximise the benefits of centralisation to steer the team's focus and priorities, and to allow them to go to the business with suggestions on what the team can do to help them; that these are the models that can help you because it's trusted and it works. But if the DM leader has no vision or strength to stand up to what he/she believes in, then the whole thing will break.
Eric	Just playing devil's advocate, during [xxx]'s (former DM head before PAR13) time, most of the analytics would be onsite in-country. If memory serves me right, you had about 30 people in DM then. The team has now shrunk by half. When PAR13 took over from [xxx], he therefore had a smaller team. Wouldn't that have impacted his ability to deliver, since he had to straddle between the onsite and offshore resources?
PAR23	It goes back to your beliefs and convictions. During PAR13's time, the DM function wasn't great. But he was the one that helped set up the centralised offshore team. He knows the capability of that team and how he can leverage it to the max. And yet he didn't. That's a very clear case that centralised offshore isn't an impediment - he set it up and should see it as an extension of his onsite team. So the problem of non-performance lies with him. But if

he wasn't the one who set up the centralised offshore, then yes, one can argue that they were working with limitations.

Eric   What kinds of problems would you automatically go to your DM team for a solution, and what kinds of problems would you not go to your DM team with?

PAR23   If I want insights on anything, I would go the DM team - I have a hunch but I need confirmation or someone to invalidate it. I wouldn't go to the DM team on anything that involves big data because they don't have that capability. For example, I wouldn't go to them to get insights on consumer sentiments.

Eric   But that's about capabilities matching. But I do want to stay a little bit on this topic about going to the DM team for insights.

PAR23   Yes.

Eric   Eric then introduces the process of translating business problems into data problems into data solutions into business solutions.

PAR23   Regarding whether problems are uncertain or equivocal, it's both. There are times where it is about asking for confirmation, and there are other times, where you are saying you have a 'hunch' but you don't understand why you're having that hunch - so give me some sense. For example, you see the symptom of high customer attrition, but you don't know what's causing it - there could be multiple reasons. You are even asking questions around whether there are current attempts to mitigate attrition, and if so, why is it not effective? The attrition could be triggered by uncontrollable circumstances or an impactful event. The answers could be one or all of them. In some cases, you may need to run some experiments because there just isn't enough data to confirm the hypothesis.

Eric   In the translation of a business problem into a data problem, do you feel that your Analytics function is able to see the potentially multiple views (like the high customer attrition example)?

PAR23   A lot of it is tied to experience in playing with the data. Experience in playing with the data would in turn help you gain business experience because you would have had to interact with the business stakeholders to get some sense. We've also had people with business experiences on the Analytics team - and this helps in defining the kinds of data that is needed for a given business problem. For someone who has had experience playing with data, they may recognise the similarity of the current problem with something that they had worked on before. The cases need not be entirely similar. So from a data perspective, you've seen the correlations, and from the business perspective, you've seen the cases. So its tied to having these 2 abilities - contextual understanding of either the data relationship or the business.

Eric   How important is it to have your Analytics team part of your management team or your management meetings in terms of gaining these contexts?

PAR23   It's extremely important.

Eric   Do they work through an iterative process with you when translating a business problem into a data problem? Do they present to you a few scenarios, and that may in turn trigger new scenarios? Or does your Analytics team go all the way to a data solution based on their assumptions?

PAR23   It will be iterative.

Eric   So by the time it comes to the business solution phase, there are no surprises?

PAR23   Yes.

Eric   So help me understand that if the process is iterative, how is it that your last DM head had problems grasping these business considerations; because he couldn't resolve a lot of the problems?

PAR23   It's a case of being able to synthesise and integrate these collective context and learnings on a cumulative basis, and not start from 'square one' every single time. It was like starting from scratch with him, and sometimes I didn't understand his logic.

PAR23   This may sound degrading, but to me, the Analytics team should be like AI (artificial intelligence) or machine learning - at the minimum be like that otherwise they would be replaced by the machines. Like the AI, you retain the learnings and keep expanding the boundaries. In some cases, you are thinking ahead and providing insights. The best Analytics relationship (with the business) are those where the analysts come to you with questions plus possible insights, even before you've uttered those questions. And that's how the iteration should help. If it doesn't, then the DM team isn't adding value. If it's just waiting to be asked a question, then the value of the DM team is very low. Then you are no more than a mere order-taker, which you shouldn't be. Because by nature, you (the analyst) provide inputs to decisions, or you could create decisions.

Eric   In translating a data problem into a data solution, how much influence does the business stakeholders have? Do the business stakeholders give explicit decisions on the kinds of data solutions that they want or do they leave it to the analysts to figure it out?

PAR23   It depends on the track records of the analysts. If in the past, they had come back with models and data solutions that have surprised the business stakeholders, and the business stakeholders were open to try and it resulted in a good outcome, then the business more receptive to giving a freer hand to the analysts to design the data solution. The analysts need to have earned the credibility. But you will always be given a chance to earn that credibility. You may fail once, but you learnt from that failure ... it's important that you show that you learn from your failures, that you learn incrementally, and you are adding incremental thoughts. Whereas if they behave like order-takers in the first instance, where they simply produce the work with no conviction or insights ... that's not the kind of DM we want.

Eric	And that was the difference between PAR13's predecessor and PAR13 (the 2 previous DM heads)? That was the contrast?
PAR23	Yes.
Eric	I would like to get your thoughts on offshoring. You lived through the change of having a full onsite team to now having a smaller onsite team complemented by an offshore team. What has changed? Would you encourage more offshoring?
PAR23	I wouldn't encourage more offshoring, but I would encourage more machine learning and AI. Because it's far easier to teach the machine about the business context in my opinion, then to teach a human being. Because when a human being doesn't live in the context of the environment, they lose the sensitivities to the market. So the model (data solution) lacks a context. And you are just looking at the performance of the model without understanding the underlying data. The reason why I feel the machine can do a better job is you have a human being who is constantly giving it that context, or it has the ability to learn new context from previous ones.
Eric	And of course the work vintage of the machine is perpetual since you never get attrition.
PAR23	Precisely! So for me, a better solution to offshoring would be to invest in machine learnings and AI with the ability to take in a broader spectrum of data, which is the context. To me, the future of the Analytics team is the ability to frame the context of the data.
Eric	But a lot of the contextual data today is not digitised. They are obtained through face-to-face meetings.
PAR23	But a lot of the models that are built can be tweaked based on the context that you feed into the machine.
Eric	But it still requires people to participate in meetings to refine and shape those contexts.
PAR23	The question is, when you do offshoring, what is it that they are doing as a value-add to the business? Human beings building propensity models and telling you that they work? And the ability to do success transfer across markets by just looking at different data? Is that their value? And if that is their value, can it be done by a machine? If the machine can take in contextual data, can leverage machine learning to build models, can run a lot of Monte-Carlo simulations to find the variables that give the best fit ...
Eric	But the Monte-Carlo simulation is sometimes akin to brute force …
PAR23	That may be, but the person reviewing the output should be able to recognise that the variables coming together as an outcome of the Monte-Carlo simulation is not meaningful, they can then provide more context and remove the irrelevance. But in the offshore scenario, you don't have the flexibility of changing their regionally-built models because it already works

for some markets, and if you don't use it, you are not benefiting from the success transfer.

PAR23   You wouldn't outsource or offshore your most advance modelling. Some people may think this is the best thing to do, but a lot of context is lost when there's no one to interface and explain what the data means or how it should be interpreted. Take the example of different affluence levels in the various markets - you would have to explain what the AUM balance means because it results in different customer behaviours. So since you have to interact with the offshore to give them the context, why not interact with the machine? And things get lost in communicating with the offshore because of culture and language.

Eric   So what you are saying is that with the offshoring, you've lost some relevance …

PAR23   You've lost the contextual understanding of the markets and the nuances around consumer behaviours. You can't just plug-and-play the models you've built. You will still need to tweak it to fit a market, even though the core principles and engines are the same. And if you need to always do tweaking, then the time taken to tweak it is faster for a machine than a man.

Eric   So things have slowed down because of the offshoring?

PAR23   Yes, it's inevitable. So having these offshore analysts spend some time in the market is useful for them to gain market context. It always results in a better output whenever the analysts spend some time in the markets.

PAR23   So my extreme view is that we don't need large analytical teams, but I think we need huge databases and we need huge computation engines that can perform the correlations and linkages. And it's up the analysts to review and say whether these linkages are meaningful or not.

Eric   But just playing devil's advocate, the fact that an analyst like myself is able review these linkages and direct the machines is because we worked on the data before. But in your scenario, if you dial it forward into the future, those analysts wouldn't have had the benefit of that training if they were only directing machines, because they would have also lost their contextual understanding. So is it sustainable?

PAR23   This raises the point that is not discussed in any DM context. It's the ability to document. To document all the discussions. Experienced analysts are good because they have the knowledge of discussions. And they use that to their advantage when they contextualise. So here, the machine has knowledge but no context. So the first generation must document the context and why they did what they did, and how they categorise that knowledge into useful buckets. So that when a new generation of analysts comes in, they first thing they have to do is to review these past documentations. And one can always say that we can layer another machine on top to be able to take that context knowledge and summarise it or give it back to the new analysts and help them to accelerate their learning of business knowledge that has acquired cumulatively over say 20 years of working.

PAR23   So if I could build something with unlimited computing power, that would be the 'holy grail'. And that's where analytics is heading. No machine can analyse everything for you. Unless they can start picking up more data from sensors … that's why sensors are important as they replace our eyes and ears. If the machine can sense, then you'll have a machine that doesn't need human beings.

Eric   Eric thanked PAR23 for his time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections.

Person	Transcription
Eric	Eric thanked PAR24 and explained the BI&A organisation design research.

Eric	If you can start by introducing yourself, your background and experiences, and in particular your experiences interacting with BI&A functions.

| PAR24 | My name is [xxx]. I've been in the banking industry for 26 years. I've hold an M.Sc. in business and engineering which includes quite a lot of exposure to statistics, mathematics, physics, etc. My father is a scientist so I have a bias for science. I joined ORG3 in 1991. Most of my career in Consumer Banking. Then 2 year ago, I became the CEO of a local bank here in Malaysia, which comprises of consumer banking but also corporate and SME banking. The non-consumer banking parts use analytics much less than consumer banking. In my previous roles doing Marketing or General Management in consumer banking, I've always been using the analytics function. More intensely since 2001 when I became APAC Marketing head for ORG3, where we had a research function, and where we also worked very closely with Decision Management. It's difficult to establish boundaries between what you call Analytics/Decision Management and other adjacent disciplines that have at their core the gathering, formatting and interpretation of data. So I would say that Marketing Research is very much adjacent to Decision Management. Some analytical functions in Finance are also very close to that. And of course in the credit world, there are a lot of functions that are either adjacent or replicating the same discipline but on a different data set. To me, it's very broad. The fact that people call it Decision Management implies facilitating decisions with data, and there are many ways you can achieve that. |

| Eric | In your current Malaysian bank, how many years has your analytical function been established? |

| PAR24 | Before I arrive, there was already a business analytics function, but it had a couple of issues. One issue was that it was primarily set up to provide MIS (business reporting) for other units in the bank. The second issue was that a lot of analytics was self-served in various areas in the bank, which then touches on the topic of pros and cons of centralisation vs de-centralisation. Centralisation has the benefit of consistency, reduced duplication of resources, particularly managerial resources. But it may have the disadvantage of being close to the operating units - they feel they have less control over the use of resources or less ability to direct turn-around times around specific needs, because several units compete for the time and resource of the centralised analytical function. |

| Eric | Where does your Malaysia analytics function report into and why? |

| PAR24 | The main analytics function is part of the Strategy group. The head of the Strategy group reports to me. Within the Strategy group are 4 functions - |

(pure) Strategy, Performance Management (tracking and directing performance across different products and units), Decision Management (MIS, campaign management which is fairly embryonic at this stage, and analytics proper), and Market Research. So I created this group relatively soon after I joined. What was previously called the business analytics function was a group of people tasked with providing information either for the businesses or for reporting to the central bank.

Eric   And prior to you joining, was campaign management part of the business analytics function?

PAR24   Campaign management was mostly de-centralised for the simple reason that the business analytics unit itself was overwhelmed by all these MIS needs. A lot of it was manual. It's a classic scenario and not the first time I've seen it - where the analytics function gets dumbed down to a pure MIS function because nobody wants to extract this information or have the resources to do it, and if there's not enough focus put into automating those MIS, it just eats up all the bandwidth that is needed for data interpretation and analysis.

Eric   Could you share the rationale behind bringing these 4 functions together under Strategy? You felt that they were very much adjacent to each other?

PAR24   Yes, it's all about being able to drive decisions. There was an inherent believe before I joined this local bank, which I think is the case in many local banks, probably more the smaller ones than the bigger ones, that gut feeling or banker intuition or experience, to a large extent, can substitute for good quality information and analysis. And that's something I disagree with violently. Because I also feel that the same people who say that are folks who are too lazy to look at information to try and interpret it. Now a system like a bank, and being part of the economy, is extremely complex in terms of causality and things like that, so interpretation does play a very big role, and not everything can be deterministically linked in terms of causes and effects. So I created the unit to try and drive that. That unit today is still resented by some of the senior folks who feel that analytics may just be theoretical. There have been some changes in the senior management team who rejected analytics and left. I think when people resent analytics thinking its theory vs practice, it's because people have a hard time separating the levels at which they look at the organisation. There is a strategic level which includes things like value proposition and how a product segment works economically. And there's operational issues. And it's not because something is not valid from a value proposition or economic model perspective that is necessarily resulting in the operational issues. And so when people can't make it work operationally, people say these strategic stuff is all just theory. But they are just issues at different levels. But people don't necessarily make that distinction. People are given goals, and when they can't reach those goals, who do they blame? Do they blame themselves, or they blame how the bank operates or they blame the guy who came up with the idea?

Eric   As you said, before you arrived at this bank, there was a lot more decision-making based on intuition … not to say that intuition is not valid …

PAR24   Intuition will reduce the quality of decision-making to a low common denominator. For example, if you want to compete in a lending or deposit

space, the first thing that people will think about is price. So they will say that since they can't move the volume, they will suggest lowering the price on their loans and increasing the price on their deposits. And they think they are done. But they are not. They are deteriorating the economics of the business, they are not considering the liquidity and capital requirements, risk-rewards and so on. So that's not the right approach. But in the absence of good quality contextual information, or good information about what makes a customer respond or behave, then price is the easiest place to go. And that inevitably leads to erosion of profitability, or attracting those customers who are price-seekers which increases the volatility of the business and reduces the ability to sell other products which requires a more involved conversation. So instinct can be a value destroyer if instinct is intellectually lazy.

Eric   When you started introducing analytics, clearly not everyone was on-board with it. I like to understand this notion that I call 'tone from the top'. Although it's used in from an organisation ethics perspective, what you are trying to introduce here is a cultural and mindset shift. Would you therefore say that you are the chief advocate for cultural enforcement on the use of analytics?

PAR24   Convincing people takes time. Some people who were not convinced left, and those who joined were perhaps more receptive. We did achieve a couple of converts over time, but it took a lot time. It's when they started to see the power of research and the responses from customers being polled, then they started seeing other dimensions. For example, when we were thinking about offering a high-yield account, and frankly, I didn't know either what the buttons were going to be ... we ended up doing research for a very long time, and we did things like conjoint analyses to test different features and concept test ... initially everybody was thinking it was rate, we realise it wasn't rates. It was the absence of fees for basic transactions that would give a better value than rates. That opened people's eyes to the science.

Eric   Did you have to enforce the cultural shift by getting the organisation to support their presentations to you with data and facts, and therefore, requiring them to partner with the Strategy group?

PAR24   Yes, but they get frustrated quickly and there are many ways to sabotage it internally. The high-yield account was a complex problem because it also included issues such as cannibalisation, balance tiering to match customer needs (we thought we could set the higher rate tiers at a higher balance level, but then found out that it didn't jive with customer needs and tolerance for how much of their assets they were willing to keep in a liquid account), etc. These subtleties are not at all what people start with. They start with, "OK, you want me to launch a high-yield account, ok, I'm not sure I believe in it, but fine. I'll just slap the tier wherever I feel like it, I will put a rate out there, and I'll come back to you a month later and tell you it doesn't work. So your idea sucks, let's move to something else." For me, it was never a uni-dimensional view of launching a high-yield account. It was more about "there is value in core deposits, but if you are too far away from market price, you are going to attract deposits with a lot of volatility, and if you are too low, you won't attract. What are the returns that can be associated with other benefits? What's the sweet spot to attract stable deposits that are

economically viable. How do you do that? Can you fit that into a strategy of target market, price points to change customer behaviour to move their funds over using headline offering but then be able to sell other products to them, etc." These are the strategic dimensions to the problem, and not about slapping on a price and hope somebody comes in. But in the absence of deeper thought, linking strategy with economics and target market, with a positioning and what blend of features would work ... that's hard work! That's very different from a very linear, very very narrow view. But to do that, you need the research, you need the analytics to crunch the numbers to see what the scenarios and potential consequences of your actions are, how do you set yourself up to track whether your execution is in line with your strategy, how do you test, which channels do you use to test, which segments do you test, etc. It's much more complicated!

Eric   The assembly of the 4 functions into your Strategy group seems to reflect this thought process that you've just described around the high-yield account. Because you think like that - you marry the inside-outside view with strategy and asking the high-level economic questions. And if you had to do it yourself, you would have compartmentalised in your own mind that you would need these components.

PAR24   Yes, maybe you're right. Maybe when the communication first came out, people could interpret it in a very dumbed-down way, but it's not. It's actually part of a much more complex view of things. The whole of process of high-yield account took a year, and the guy who was sceptical at the beginning and who did a sabotaged test, became a convert to the insights. He came to embrace that to the point where when we started doing transformative value propositions and things like that, he had become a complete believer in the research and that made things a lot easier. For example, a good value proposition would have good product, good service, good pricing, etc., but what differentiates your value proposition from somebody else's in terms of really advancing the economic interest of the bank, is really the analytics, the user experience and the partnerships you can form. Why? Because the analytics will guide you in term of economics, would guide you in terms of concept testing - what would resonate with the consumers, what's the economic potential, whether you can make it work economically in terms of cost of delivery and so. The user experience will teach you how to maximise utility for a consumer and adhesion to the offer - because it would drive whether people will buy or not, it will drive whether people will use or not; that's very critical because few banks actually think about that - they just put the functionality out there and hope that people understand the value and how to use it.

Eric   Is Customer Experience part of your Strategy group?

PAR24   It is. The user experience testing is done through the Research function that's part of the Strategy group. Customer experience is part of research.

PAR24   The third piece is partnership. Partnership is one of the ways to create barriers to entry. It's a very effective way to do that, and I think barrier to entry is actually a combination of partnership and user experience. So those are the differentiators. We actually filter on how to look at value propositions. First filter - does it fit into our strategy. Our strategy is to be

the most important relationship for the success of business owners, which in fact means, helping business owners in their business and in their personal lives, their employees. Second filter - does the value proposition fit into the brand. We did a forward positioning research and came out with a brand architecture that work across all the segments that gives the bank a space it can occupy, and also gives the bank a space that's sufficiently differentiated and relevant; and that can be summarised very simply as "offering innovative solutions that are fast, simple, responsive, and in the best interest of customers." Third filter - a set of business filters to see if it's viable - value proposition including concept testing, how is the offering built either through on-us or through partnerships and outsource, offer scalability, is the user experience compelling and attractive, and finally, do the economics work. So if you pass all these filter, you've got something that works. It's evolved from the simplistic "if you want a high-yield account, I'll give you a high-yield account." So the Strategy group leads this thinking and process. For big new products and projects, they have to go through that. Remember I talked about the strategic vs the operational dimension, and I have to say that while we have the strategic dimensions in place, we don't yet have the operational dimension quite where we need to be at this stage.

Eric   Given that your Analytics function sits within the Strategy group, I assume that it supports all lines of business across the bank?

PAR24   It does, although the business complains abundantly. Of course they would prefer to have control over their own analytical resources. I think it's an issue of the desire and need for speed and efficiency vs bandwidth and resource availability. It's a valid view from the product groups, of course. But I think it's also an issue of how matured the organisation is, how capable the folks within the product group are at using analytics.

Eric   The Analytics function don't just support Consumer Banking but also …

PAR24   The Performance Management function supports the whole organisation to align performance scorecards. We design the scorecards at the organisation level covering performance, franchise and people KPI. And projects. The scorecard is architecting in a way that it cascades down level by level, to pick up the items at the top level that need to be slotted into each of the individual performance scorecards, and also, we link up some of the things that people need to collaborate, so they have joint KPI, joint recognition of outcomes, etc. The Performance Management team produces a deck that is used in a weekly meeting where we try to orientate production in a way that maximises the outcome. For example, how do we optimise production of higher risk-adjusted returns loans ... we've now move towards a risk-adjusted returns on capital ... and minimise the production of lower risk-adjusted returns loans, set the cut-offs, so that we can optimise the returns on capital. Then we also looked at how to optimise the funding. So the production deck is now quite extensive, which includes MIS around the yields of the different products, both on the assets and liabilities side, how the production is going from submission to approval to disbursement, how the pipeline is working each of the products and segments, etc.

Eric   Does the Analytics function support Operations, Finance, etc.? For example, supporting Operations to improve their operational efficiencies?

PAR24   Currently no. But it should. We are trying to sharpen our efficiency of expense management on the operations side, but frankly that's missing today. I remember that at ORG3 we had a very good Operations MIS deck that had various unit cost and such.

Eric   At the start of this conversation, I heard you say that your views on Analytics or BI&A as I collectively call it, is in service of making better decisions. Is that how you view it and is that how your organisation views it? Have you communicated that across the organisation?

PAR24   I don't know the answer to either questions. Whether I've communicated it effectively, I'm not sure. Whether the organisation views it as going beyond uni-dimensional decision-making, I'm not sure. Or perhaps they look at it as a feedback mechanism on how the business is doing. I'm not sure.

Eric   Even though the Analytics function sits within the Strategy group, the lady who runs the Analytics function [xxx], is she part of your leadership meetings and planning discussions, or is it only her boss [xxx]?

PAR24   It's more her boss (Head of Strategy Group). [xxx] (the lady who runs the Analytics function) is actually rarely making these presentations. Probably a short-coming there. I think it's a combination of things - part of it is her personality (she is reserved). But you raise a good point - she should get more exposure. It happens but it's fairly rare.

Eric   So [Head of Strategy Group] represents for all the 4 functions in the Strategy group?

PAR24   Well actually [xxx] who is the head of Marketing Research presents much more often than Ai Lee does. I do feel a bit self-conscious about the question because I do have to recognise that in reality, [Head of Marketing Research] is more exposed than [Head of Analytics].

Eric   But [Head of Analytics] may be attending meetings with [xxx] (consumer banking head) …

PAR24   Yes, she may, but I don't have visibility on that.

Eric   So does [Head of Strategy Group] then represent the contribution of analytics in your leadership meetings?

PAR24   You raise a good point, and I probably need to have a conversation with [Head of Strategy Group]. Don't worry, it will be a good conversation. My view of Decision Management is actually broader than [Head of Analytics]s team. I think the proportion of time that [Head of Analytics]'s team spends generating MIS or formatting data instead of interpretative analytics is not where it needs to be.

Eric   They are still more of a support function rather than playing an advisory role?

PAR24   Yes. It always requires freeing up the bandwidth from the MIS generation so that they spend time to give their thoughts, ideas and interpretations. There is some of that, but I think it's still too little.

Eric   So right now, the role that the Analytics function play is more the provision of information at meetings and support …

PAR24   Yes and No. To be fair, the whole banking industry in Malaysia struggle with deposit growth in relation to loans growth. For the last 3-4 years, loans growth has been systematically higher than deposit growth. Which means that there is a premium on being able to attract deposits. Which we would like to do intelligently. There's always to question of why do people open accounts, why do they put in deposits with you, how you track them, what are the factors and so on, and can you find nuggets of information in the portfolio or in different segments ... So the Analytics function does do analysis on that, but it tends to be presented at production meetings by [Head of Strategy Group] himself. And frankly, the level of that analysis, in my view, is still quite rudimentary. It's not very advanced. So between correlation and causality, there is a lot more emphasis on correlation. But of course, to get to causality, you cannot just do number-crunching. You have talk to people, you have to interview, you have to combine ...

Eric   And hence the question. If [Head of Analytics] was more present in some of these senior management meetings, would you then see the analytical output improving?

PAR24   Maybe, but I'm not 100% sure. Because of her own inclinations. Ideally yes, but I'm not sure how far it will go.

Eric   Does your Analytics function have any decision rights or approval authority? So for example at ORG3, we would co-sign on product launches or product pricing, and we would decide on customer contact policies.

PAR24   By right they should, but I don't think at this stage they have any decision rights yet. On customer contact strategy, I've been pushing the consumer head and his team to drive that, using the analytics, but having a more proactive involvement of analytics in these discussions would be more useful. Thank you for the suggestion.

Eric   Is the Analytics function consulted on most initiatives that is data-oriented?

PAR24   Right now, there is a tendency to view them as a service provider. That does need to shift.

Eric   But that's surprising considering at the top of the house, you are a big cultural advocate on using analytics.

PAR24   You make me feel bad [smiles]. First of all, [Head of Strategy Group] is my point man. I do trust him to manage the resources. But at the back of my mind, I'm thinking that may not be right and that I should have a discussion with [Head of Strategy Group] on this whole perception of Analytics in the organisation. The Analytics function came from a time when they were really constrained on resources, operational issues, technical infrastructure

and server speed and bandwidth issues, data architecture issue, etc. There was a lot of stuff to mop up and fix. But I guess I've let them off, probably a little too long, because in my mind, I'm not very sure how much bandwidth is actually being occupied still dealing with these legacy issues and doing MIS, and how much incremental bandwidth is available for analysis. I'm actually letting [Head of Strategy Group] do that load balancing, but you are making a fair point that if the visibility of [Head of Analytics] is not sufficiently high where she can start intervening in these discussions, and perhaps shift some of the decision power or the ability to structure the information - like the customer contact strategy is a very good example. Evidently it's not wrong to say that the business is responsible for the contact strategy, but giving more say or more power to the Analytics function may be good. I'm a big believer in contact strategy - I've seen it work. I know it has immediate and strong impact on things like Net Promoter Score and customer satisfaction. But the issue is that it's a fairly unknown discipline at our bank. It has a bunch of operational issues associate with it to ensure the contact strategy itself is enforceable, and then how to optimise it, which is hard when you haven't even had first run. I think there are sequencing issues there but your point of involving early and raising the visibility of the function is right.

Eric   How important is self-help MIS to your organisation?

PAR24   I saw that question but I didn't understand what that means?

Eric   There is an old theory about the co-location of information/knowledge and decision rights. If self-help MIS is the chief priority in the business, is it symptomatic that the business wants to continue holding decision rights and believes that it is more convenient to do so than to provide the information/knowledge provider (i.e. the Analytics function) with some decision rights.

PAR24   I think the issue is on the integrity and the quality of the MIS output. Can you trust the self-help MIS? At this stage, it's kind of hard to trust it. But the business does want it. You've been inside. Would you trust the skill level of the business folks to extract that information and interpret it? No, right? I don't think the business has that ability. The business is just not matured enough for self-help. I see the gap when they present things to me.

Eric   Within [Head of Analytics]'s team, how is it organised? Do you think the organisation structure make sense?

PAR24   Actually I don't have much visibility on that. I know at the onset that had different teams to manage MIS, campaigns and such.

Eric   The last time I was here and when I spoke with [Head of Analytics], they were considering creating a line-of-business face-off vertical structure.

PAR24   I haven't looked at the organisation chart recently, but a couple of things have changed.   There was an agreement to pass back some analytical resources to the credit team. That was done a few months ago. It was a mutually consensual decision.

Eric	Is [Head of Analytics]'s team all seated together or are they disbursed across the organisation?
PAR24	They are all seated on the same floor as the rest of the Strategy group.
Eric	But that same floor doesn't house the lines-of-business? The Strategy group is separated from the lines-of-business?
PAR24	No, there is no line-of-business on that floor. It is true, the Strategy group is separated from them. And they are accessed through different elevator banks, which I think is a problem.
Eric	So does this create a distance, an isolation and disconnect?
PAR24	Yes, it probably does.
Eric	What kinds of problems would you not ask your Analytics team to engage in?
PAR24	Firstly, I use [Head of Strategy Group] as a filter for everything. But I would err on the side of asking the Analytics function to solve stuff that I wasn't even sure they could handle. Because I would like to see what comes back.
Eric	So this brings me back to the construct of uncertainty and equivocality in engaging in analytical work. There are multiple interpretation and objectives in solving a problem. Take the high-yield account. It isn't just solving for deposit funding, but may also be solving for long-term relationship building.
PAR24	Yes, you are right. And I guess the problem of us having different frames of reference in our heads and assuming the other understands what we are saying, is a common one. And that's why I have [Head of Strategy Group]. He and I understand each other very well. So there's not much loss of information during transmission. And he's very good at translating the business problem into a data problem. He helps to reduce the loss of information as it gets transmitted down the line. And that's why he makes me comfortable otherwise I would get very frustrated.
Eric	Eric then introduces the process of translating business problems into data problems into data solutions into business solutions.
PAR24	I believe there are very few people who are skilled at translating business problems into data problems.
Eric	But is there a way that organisations can be set-up so that they become more effective at doing this translation? I believe things unravel at the very beginning and that's why analytical solutions are incomplete or irrelevant.
PAR24	It's a very valuable question. You have different degrees of solutions. You can either express the problem in a very broad sense, and leave a lot of room for the person translating the business problem into a data problem to decide which direction they want to take in the interpretation. Perhaps a better approach is to have a more in-depth discussion on the nature of business problem so that you can narrow down avenues that you want to explore, but

	not too much to stifle the creativity of the person translating the business problem into a data problem, but enough to weed out the obvious stuff that you don't really need.
Eric	Yes, that the idea of seeking convergence upfront to remove equivocality and ambiguity.
PAR24	But you have to be careful not to remove too much equivocality upfront otherwise you get this IT model where it becomes like a user requirement and I produce exactly to specifications and nothing more.
Eric	Fair point. It cannot be mechanical but at the same time, it is important to agree what the boundaries of the problem statement are.
PAR24	Yes. The quality of stating the business problem has a great impact on the solution that you end up with.
Eric	And today, being the CEO, do you find that the data solution and/or business solutions that you get are complete and relevant? Are you happy with the quality of output?
PAR24	It depends what you define as a data solution. Is it a complete guide of decision-making or is it bits of information that you still have to piece together to come up with the final decision. Mostly it's the latter. I think today we are closer to something more actionable on the marketing research side than we are on the analytics side. That's my view.
PAR24	It's an interesting perspective. What you've tried to establish is some kind of value chain. And the front-end and back-end of that value chain are pretty weak. The middle part is ok. But the middle part is a whatever you get from the front-end.
Eric	Yes. I don't think people have thought about the problem like that.
PAR24	In the heat of the battle, neither have I. But it's a good way to look at it.
Eric	Thank you. One final question around outsourcing and offshoring.
PAR24	I guess you've already answered the question. If the front-end of the problem has been defined really, really well, then you have a pretty good chance of augmenting our resources via outsourcing or offshoring …
Eric	But you wouldn't outsource / offshore the front-end?
PAR24	No, that you cannot.
Eric	Why not?
PAR24	Because the front-end has got to be a discussion between the business and the resource (may not necessarily be the number-crunching resource) that is going to translate it into ta data problem.
Eric	But one can argue that you have video conferencing facilities today …

PAR24   It's the same problem we have with products. We think of the bank as something that should become a relationship bank and as an automated bank. Why do we think we can have an automated bank in some instances it's because you can effectively and reliably map and codify all the possible interactions with the customer? It may not be perfect, but it's pretty close. By the way, automation only works if you can codify it well. Otherwise the defects overwhelm the ability to scale up. But there's a point where you cross over into too much complexity or too many bifurcations of what is possible, which means it then becomes a relationship bank because you cannot automate, and in fact, it's uneconomic to automated. So there's an inflection point at which you say it's better to have people than machines. You and I have been in this business for a long time, and even with the growth in computing power, it hasn't moved the needle significantly. We still haven't' been able to codify a lot of complex things. So I think it's exactly the same issue. The front-end is equivalent to relationship banking. I think you made the point very well. That if the initial conversation or framing of the problem is to give the person who is going to interpret it into a data problem, that has to be close to the origin.

Eric   So there's not transmission fidelity loss.

PAR24   Yes. The front-end has to be close to the origin, and the back-end has to be close to the origin. The stuff in-between, you may be able to outsource or offshore. It's not 100% because there's always going to be adjustments along the way, but it's more understandable to have the middle piece ...

Eric   Because it can be codified?

PAR24   Yes. But once it comes out at the back-end, it has to go back onshore, so to speak. I could imagine that could work, but not the front-end and back-end. And I think there's confusion at the stage where business problem becomes data problem, the data problem can then be expressed as how you structure the data solution, and yes, there can be many different data solutions. Now, that layer where the person is translating business problem into data problem, cannot sit offshore. It's completely impossible. That means the leadership, or the purely analytical part of the function, that must reside onshore. Whether you can offshore the data crunching part, perhaps, but there's always interpretation issues.

Eric   Eric thanked PAR24 for his time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections.

Person	Transcription
Eric	Eric thanked PAR25 and explained the BI&A organisation design research.
Eric	If you can start by introducing yourself, your background and experiences, and in particular your experiences interacting with BI&A functions.
PAR25	My name is [xxx]. I have a bachelor's degree in accounting, a masters degree in finance from RMIT in Melbourne. I have about 21 years of work experience. But in the analytics space, I started out as a corporate RM, and then moved on to Credit Approval in consumer banking, and then to managing business and financial analytics for credit cards. Then I took on a deposits product management role before I moved to ORG3 Malaysia as a business analyst head for Retail. And I'm now the Analytics head for ORG11. The role was initially focused on consumer banking but it has since been expanded to cover business banking as well. While ORG11 has corporate banking, they don't need a lot of support from us, other than some help on Treasury reporting. So I spent about 14-15 years in BI&A related roles.
PAR25	It's been a lot more intense focus on BI&A in my role at ORG11. They are not as well-structured as ORG3 and so I had to build up a lot of the capabilities and processes, including the technology and infrastructure to support it.
Eric	How long as the BI&A team been established at ORG11?
PAR25	It's been around for 10-12 years in one form or other. They were primarily focused on consumer banking and on reporting and campaigns. And even in campaigns, the number of campaigns executed was quite small. They were already part of a centralised team since then, but we have expanded. We've now taken on responsibility for the credit decision engine where we help maintain the various acquisition and behaviour credit scores for the risk function. I've got 3 people in the BI&A team dedicated to that activity.
Eric	How large is your BI&A team?
PAR25	I have a budget for 51 headcounts, but I have only about 37 active.
Eric	Who do you report into?
PAR25	We sit within a division called CE&A (customer experience & analytics). I'm the head of analytics reporting into the head of CE&A, who in turn reports into the CEO of the bank. My peer would be the head of customer experience - he oversees the call centres, process improvement initiatives.
Eric	Is there a reason why customer experience and analytics are placed together?

PAR25   It's more the strategy of the current group president. It was to turn ORG11 into a more customer experience focused organisation, supported by technical innovation and digital. He didn't want to leave the technical innovation part to IT, but wanted all of that within one unit. So Ed Pinto who is head of CE&A drives that customer experience as well as the analytics behind it, and the digital projects behind it.

Eric   Is Marketing Research part of CE&A?

PAR25   No.

Eric   What does BI&A (I use the term collectively) mean to you and your organisation?

PAR25   BI&A should encompass marketing research, marrying both the hard (quantitative) and soft (qualitative) data on the customer. BI&A is actually consuming some social media data in this regard, not the marketing research unit. We are monitoring what the customer is saying on social media with regards to service, products and pricing. It's on a reporting phase right now; we don't yet have the talent to fully analyse it. There is also the focus on robust and consistent business reporting, rather than piecemeal publication to the business. It should all be consolidated - single point of truth - using a consistent language and definition (KPI) throughout. We can provide all the data and insights, but different people receive and digest it differently, and so we want to reduce the mis-interpretation and mis-understanding.

Eric   So BI&A for you is about the marriage of quantitative and qualitative data, the ability to manage the processing and workflow of information …

PAR25   So that it aids decision-making ultimately. So that decision-making is consistent and aligned with strategy.

Eric   So BI&A is all about decision-making?

PAR25   Yes. So that things can move forward. It's just about churning out reports; it has to serve a purpose.

Eric   What is ORG11's perspective of BI&A?

PAR25   It depends who you ask. But generally speaking, we are still trying to get the organisation to understand that analytics can do a lot more for them. We still have a lot of old-time staff that see BI&A as reporting. But they do trust the BI&A team on the reporting. In fact, they prefer to come to us rather than Finance. There's a lot more information requests from the regulators that the business comes to us for support; we can handle it but it takes away bandwidth in developing more creative solutions. Perhaps it's our fault because we 'train' them to see us in that way also, because of the capabilities that we have. So the business sees us as very, very competent in reporting, and for fixing these 'fires' that are being started by the regulators. We haven't been really able to move into the space of imaginative stuff. We've done some small stuff where we've pitched the idea and worked on it; we've gotten good response rates and very good returns on small investments. All that is just starting to come together. At the C-suite level, they do believe in

	BI&A and they do want it. But they are also aware that infrastructure-wise, the data may not always be available.
Eric	You report into [xxx], head of CE&A. [xxx] is also the COO. [xxx] reports into the CEO. So you are 2-down to the CEO?
PAR25	Yes.
Eric	So do you participate in the CEO senior management and planning meetings?
PAR25	No I don't. I do sit in for the Asset & Liability Committee meetings and the 2 sub-committees attached to that - the Deposits Workgroup and the Loans Pricing. But I of course sit in for Ed's meeting.
Eric	Do you participate in the lines-of-business meetings? Like the consumer banking head's meetings?
PAR25	No. I deal with all my peers, who are 2-downs to the CEO. So 2-downs from CEO do not sit in the CEO meetings.
Eric	What role does BI&A play in the meetings that you attend?
PAR25	Usually when the business asks me to come for a meeting, they want some provision of data or information, or to get some campaigns going. But I try to get to think about the strategy of their decisions and intended actions. I end up being the lecturer, the 'whip' at the meetings. I tell them how they can be better aligned to the bank's strategy. The business has a tendency to do a lot of things on a piecemeal basis; they just want to get things done quickly to fulfil the boss' orders. So I try to reign them in, to prevent them going on their own independent path; I try to get them to do the right thing. I have these conversations with the Compliance team as well - when they were looking at FATCA [US tax reporting], they didn't know what to do and I had to guide them towards the right process; data provision and resource was not an issue.
Eric	For your one-downs, what is their exposure to more senior management meetings?
PAR25	My one-downs represent me when I'm not available. It's a really on a case-by-case basis. I'll pull them into discussions if there is merit for them to be there and be part of the conversation. But generally they don't have consistent exposure to senior management meetings.
Eric	When you were in ORG3 and heading up the Retail Analytics team, while PAR6 was the head of Decision Management, you would be part of the Retail Banking senior management meetings. Is there something similar with your BI&A team at ORG11?
PAR25	At ORG11, only the Cards business have formal meetings, and I attend those on behalf of the BI&A team. For the rest of the other business stakeholders, I meet the heads on a 1-on-1 basis. It's pretty hierarchical.

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Eric	Because you can only talk to your peers at ORG11, do you see a loss of fidelity in communication transmission?
PAR25	Certain things might be missed out, but not to a large extent.
PAR25	My BI&A team respond on a 'transaction' basis. They don't go over and above. They give the business exactly what they request for.
Eric	Is it because your BI&A team lack business context?
PAR25	When I joined ORG11, the BI&A team that I inherited was quite junior. So I created a layer in between. The 'transactional' behaviour was prior to this in-between layer being established. As the new managers came in, I tasked them to make the output more strategic. Now we do, on occasion, go in and discuss new opportunities with the business heads.
Eric	Does your BI&A team have decision rights or approval authority?
PAR25	We have decision rights on campaigns, customer contact policy, data access.
Eric	In which areas is BI&A concurrence or consultations sought?
PAR25	Any data-related initiatives or data-driven solutions would require our concurrence. For example, even the opening of new branches would require our inputs - in fact we are driving this as part of CE&A.
Eric	Does your BI&A team own any policy?
PAR25	We own the data model & data management policies. And customer contact policy.
Eric	How do you define success of your BI&A function?
PAR25	Success is currently defined by our ability to deliver on projects and analytics capabilities building. We monitor campaign response and conversion rates, the ROI, etc. but the outcome (i.e. shadow revenue) doesn't have a high weightage in our performance scorecard. We did a pricing project and saved the bank about MYR 20 million recently.
Eric	Success aside, what's inside your performance scorecard?
PAR25	It's still very much project-based. We have to build capabilities around cross-border, sales productivity and efficiencies. Technology enablers and upgrading the data architecture. I've got some cross-sell stuff as well using open-source data.
Eric	Is your scorecard aligned to your team's capabilities?
PAR25	Not 100%. It's in the range of 65-75%. I think they can build the capabilities, but it's not yet meeting my own standards. So maybe, it's me.
Eric	How important is self-help MIS?

PAR25	We do want to enable as much self-help MIS as possible. To make sure everyone takes from the single source of truth. But we also understand that our business stakeholders may not have the maturity for it. So there are varying levels of analytical competencies and desire for self-help across the organisation.
Eric	But do you desire self-help MIS so that you can free up your team's bandwidth?
PAR25	Yes.
Eric	But does your business stakeholders really want it? Perhaps they may be saying that since BI&A is doing such a great job in providing us with data and information that we would rather go to them than pull it out ourselves?
PAR25	The business is asking for excel-based reports from my team, so it requires them to cut-and-paste to achieve that, which is painful. We are moving the business stakeholders towards Tableau, replicating lock-stock-and-barrel all the excel reports, as a way for the business to help themselves. I'm also overlaying it with some nice dashboards and visuals, so that the business can play around and have all the access they need. We've enabled Tableau on their mobile and desktop, and slowly shutting off the old way where we would push out the excel reports.
Eric	So you are pushing self-help more than the business is pushing for it?
PAR25	Yes, that is correct.
Eric	Can you describe how your BI&A team is organised?
PAR25	They are structured around the lines-of-business. I've got a team for unsecured lending, one for deposit & secured lending, one for business banking, one for all the bank wide stuff like channels, segments, etc., one for credit decision engine. I also have a quasi IT team called Analytics Infrastructure. I also have the BI&CM (reporting and campaign management) team which are focused on enabling the reporting and campaign management tools; they are not the ones doing the campaigns. The campaigns are done within the lines-of-business teams.
Eric	So each line-of-business BI&A sub-team will make their own reports and campaigns?
PAR25	Yes, and they also do the analytics.
Eric	So how do you join across the lines-of-business with your customer contact strategy? How do they coordinate?
PAR25	That's pre-built into the unified campaign engine.
Eric	You don't see duplication of capabilities?
PAR25	Definitely yes. While I prefer a more specialist team approach, [COO] prefers the generalist approach. But I do have that specialist split in the

	Cards BI&A team as they handle a lot more campaigns and I have a pool of fairly junior staff in there.
Eric	How does this impact career progression?
PAR25	The juniors know that they have to improve their MIS and campaign skills (improve turn-around time for example) before they can become more senior and work on more complex and strategic projects.
Eric	So there is a pecking order of MIS, and then campaigns, and then analytics?
PAR25	Yes. I'll give the juniors the simple analytics stuff sometimes to work on.
Eric	What about the modelling piece?
PAR25	There is a dedicated modelling team, but it's not parked under BI&A. It's a legacy thing. And she has all the certifications for doing advance modelling work. It was originally slate to be part of BI&A.
Eric	Is the BI&A team sitting together or with the lines-of-business that they support?
PAR25	They sit together.
Eric	And is that proximally close to the lines-of-business that they support?
PAR25	We are all in the same building. But different floors.
Eric	Is that good or bad? To be seating away from the business?
PAR25	The product managers come up to our floor a lot and sit and converse with our analysts. They come to us, we don't go to them.
Eric	So the product managers come to you to explore and iterate the solutions?
PAR25	Yes. And even when the solution is rolling out, they come by to monitor and revise.
PAR25	The relationship with the lines-of-business is quite good and I don't see an issue with us being on a different floor.
Eric	How does your BI&A team interact amongst themselves
PAR25	I have my one-down meetings where we get updated and aligned.
Eric	But you don't get your different teams to present their work to each other?
PAR25	No. But I should.
Eric	Are you currently outsourcing or offshoring any of your BI&A activities?
PAR25	We are outsourcing on some IT capabilities; using consultants. We have consultants helping us on report-building capabilities.

Eric	These are project-wise consulting engagements. But do you have a continuous outsource or offshoring to a COE?
PAR25	We are supposed to. The CoE has been set up in Pakistan. It's only monitoring the performance of the datawarehouse. It's more of an IT support. They don't do any reporting, campaigns or data preparation. But there is an intention to do that.
Eric	Given the onshore competencies in reporting and such as you have shared, why are you offshoring?
PAR25	We can't ramp up our capabilities if we don't offshore these activities.
Eric	But you are already moving your reports into Tableau.
PAR25	Personally, I would rather not offshore. Based on past experiences with past organisations on cultural challenges with offshoring to the Indian sub-continent. I'm worried that things are going to get more lost in translation.
Eric	That seems like a cultural concern. Would you have the same concern if the offshore CoE was in Manila?
PAR25	Maybe not. I would have less concern. Yes, it's cultural differences.
Eric	Eric then introduces the process of translating business problems into data problems into data solutions into business solutions.
Eric	Do you experience a lot of equivocality or ambiguity when translating a business problem into a data problem?
PAR25	It depends on who is doing the translation. When I'm doing it, I don't see the ambiguity. When they tell me the problem, it's very clear to me and I'm able to extrapolate what the likely business solution would be.
Eric	And do you play this back to the business during that first discussion?
PAR25	No I don't.
PAR25	You need someone experienced enough to translate the business problem into a data problem. Someone who knows who to ask the right questions and frame the problem. And we already know what data is available. So there's no ambiguity if you know how to ask the right questions.
Eric	And you feel that is not a problem today? That you have achieved convergence upfront and therefore you don't have an issue with incompleteness and irrelevance in the data solution?
PAR25	It requires experience. The junior analysts can't do it.
Eric	Do you use scenario building as a way to iterate the possible framing of the problem and solution with the business? Use the simulation tool to seek

convergence on the problem statement? It's a way perhaps for the junior analysts to handle equivocality and ambiguity?

PAR25   I understand. But it's currently not a process or methodology for us.

Eric   So you propose a solution upfront and the business accepts it?

PAR25   Yes. I get very little push-back. We tell them that our solution will address close to 100% of their problem and that we've thought through the consequences. We do give them 2-3 options in terms of how the solution can be done with respect to the different revenue and cost economics. So I guess there is a little bit of scenario building.

Eric   I'm assuming you feel that you have more knowledge than the business, and therefore, you are more confident in your solution proposal. The power balance lies in your favour?

PAR25   Yes.

Eric   Is there a lot of equivocality when you translate a data problem into a data solution?

PAR25   Not so much. When we propose a solution, we execute it quickly. We don't drag it out. The solution is not proposed up front, but we do focus on expediency and what results we get to then fine-tune.

Eric   Do your analysts raise different perspectives how to solve a problem?

PAR25   They do. But of late, I've been a little forceful and I pick the solution and tell them to move forward. But I do tell them to design the solution so that it is flexible enough to be modified later if needed.

Eric   Do you not want your analysts to be more creative?

PAR25   I do. But they are not meeting my expectations right now. So I would rather go with my solution.

Eric   I think we all recognise that there is a fair amount of equivocality in most problems. [PAR25: Yes] But for you, there is less ambiguity because of your experience that allows you to recognise the problem statement and the context. But for the rest of your team to get to that level, they need to raise their game. [PAR25: Yes] But for them to raise their game, means they need to be able to recognise these ambiguities and to work around them and seek convergence. [PAR25: Yes] How are you therefore addressing this missing capability today?

PAR25   I should step back a lot more and let them fail. Get my one-downs to do more conceptualising rather than the hands-on work. I should make them attend the discussions with the business and then come back and debrief me and tell me what their proposed solution would be. And then let them interface back with the business with these options and their preferred choice. By the time they get back to the business, they would have my full

support. Overtime, as they do this, I can release the reigns and let them go. It will build their confidence.

Eric   Today, you are funnel for the business interface. So you are saying that you want them to interface more with the business rather than you?

PAR25   Yes. They are already attending these meeting with their peers, but they need to be part of the more senior meetings.

Eric   Eric thanked PAR25 for his time, and informed him that he will be sharing the transcribed notes with him to allow for opportunities to make any changes and corrections.