5-2019

The multidimensionality of business risk: A managerial perspective implications for its classification, interpretation & management

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2019

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Submitted to School of Business
in partial fulfilment of the requirements for the
Degree of Doctor of Philosophy in Business (General Management)

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2019

I hereby declare that this PhD dissertation is my original work
and it has been written by me in its entirety.
I have duly acknowledged all the sources of information
which have been used in this dissertation.

This PhD dissertation has also not been submitted for any degree
in any university previously.

Prakash Bagri
15 May 2019

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Abstract

Business risk has been a critical area of managerial attention and the topic of extensive academic research. Despite the intense focus, there is little convergence around its understanding and limited insights on how managers deal with it. Extant literature provides an ex post model of business risk, focusing on the behavioural context of risk taking driving a linear expression of risk action.

We conducted in-depth interviews of 16 C-suite executives to find that managers (1) view business risk as a multidimensional construct involving different facets of risk, (2) emphasize the importance of people across these facets, (3) differ in their prioritization and interpretations of particular risk facets which together form their risk perceptions and (4) their perceptions influence their risk management action.

Integrating findings from fieldwork with extant theory, we propose a conceptual model towards an ex ante understanding of business risk. Our model links individual, firm and industry-level variables to managerial prioritization and interpretation of business risk, and we use it to develop distinct research hypotheses.

We carried out a second-stage quantitative survey of 182 managers from manufacturing, services and technology businesses. The results demonstrate (1) significant correlation between firm & industry-level variables and managerial perceptions of market-facing risks, (2) contradictions between managerial perceptions of different risk facets, particularly people risk, (3) paradoxical relationship between managerial experience and risk perceptions and (4) possible blind-spots in managerial perceptions of risk.

Our research emphasizes the need to deal with business risk in a structured manner and to broaden organizational cognition whilst planning risk management efforts. Our study has implications for both managers and academics. We develop the risk management landscape as a systematic approach for dealing with risk and leveraging it for business advantage. Finally, we discuss limitations of our study, and consequent directions for future research.

Keywords: business risk, people risk, technological risk, risk perception, risk taking, risk management, risk management capabilities

Table of Contents

Acknowledgement

This was a long arduous trek with more than a fair share of upheavals. I have been fortunate to have had truly amazing guides. But for your continued inspiration and support, I may not completed this journey.

I would like to express my sincere gratitude to my advisor, Prof. Philip Charles Zerrillo for his continued guidance and support of my research. His motivation has been instrumental in helping me complete this study.

I remain indebted to my co-advisor, Prof. Rajendra K Srivastava. He has been an amazing mentor over these years and constantly pushed me to go further. But for his encouragement and support, I may not even have embarked on this path.

I have been privileged to have both Prof. Srivastava and Prof. Zerrillo as my advisors. Thank you for the countless hours and numerous weekends of your time, for your continuous inspiration, for your patience and for your perseverance during my extended research.

I would also like to thank my committee member, Prof. Abhijeet K Vadera for his insightful comments, guidance and encouragement which helped me refine my research.

I would like to thank Prof. Piyush K Sinha who has been a constant sounding board, friend and guide during this journey.

I would also like to thank my friends who helped me in multiple ways - through sourcing respondents, in crunching numbers, to helping articulate, while doodling graphics and in proof-reading this dissertation. Special word of thanks to Ashish Khandelwal, Joe Fernandes, B. Prabhakaran and Ravi Chandran. And to countless more for keeping me motivated and pushing me towards completion.

I worked in one of the most dynamic organizations of its time. I also experienced its periods of disarray and saw it bounce back every-time. I am thankful to my numerous colleagues from Intel for those experiences. Andy Grove (who I was privileged to hear during my stint at Intel) famously talked about navigating through change. It sowed the first seeds of enquiry and went on to become my dissertation topic a decade later.

Finally, I am grateful to my family for making this journey possible and in particular, my mother, for her limitless blessings and continued encouragement.

Dedication

To the memory of

My father, JD Bagri and

My beloved sister, Rajashree Bagri.

You were both my greatest supporters as I embarked on this journey. You would have been the happiest to see this through.

"Wish you were here…"

Prologue

"The wheel is turning and you can't slow down,
You can't let go and you can't hold on,
You can't go back and you can't stand still,
If the thunder don't get you then the lightning will."
'The Wheel' [1]

Dealing with change is the biggest challenge that businesses face. In my two decades as a corporate executive I personally experienced the thrills and heartbreak of running along with Moore's Law, and as an academic for the past eight years I have witnessed it more dispassionately, albeit with a greater degree of inquisitiveness and interest.

Businesses struggle with change every day. Some go out of business because they can't handle the adversity to their operations. New ventures ride on the adversity and establish themselves. Some businesses just manage to survive the apparent storm, whereas others skillfully navigate through it and emerge stronger. This incessant challenge of the unknown is what we also call risk.

I realized we see this difference in the fortunes of companies because all managers differ in the way they see risk. During my career I have observed different managers dealing with change in different ways. Some try to circumvent it, others try to compensate for it, and a few manage to overcome it.

As I explored the context of risk and change, I came across many books, numerous studies and countless personal experiences. However, I didn't find

[1] Garcia, Hunter & Kentzmann, 1972, "The Wheel' on Garcia, Track 10. Warner Bros.

one which tried to look at this journey – of managing through change, of dealing with risk – in a systematic way and from the viewpoint of the managers who are dealing with it.

Risk is unavoidable. When managers see risk, they cannot choose to ignore it. Or play a game of chance. Instead, they have to act.

I thus embarked on this long, arduous journey of trying to understand risk. Risk in all its complexity - in different forms, with varying intensity and subject to multiple factors. Risk as the manager has to deal with. And he can't let go, because in the immortal lyrics of Jerry Garcia, *"...if the thunder don't get you then the lightning will"*.

1 Introduction

"Along with death and taxes, risk is one of the certainties of life"
(MacCrimman & Wehrung, 1986, p. 4)

We live in challenging times amidst an increasingly risky business environment. Companies are having to deal with greater geopolitical uncertainty, increasing public scrutiny, growing legislative oversight, ground breaking new technology and an ever-changing user base. Existing businesses are being confronted with lack of differentiation and commoditization at one end, and disruptive offerings on the other. There is a blurring of boundaries across industries and emergence of newer players with exciting non-legacy business models.

This is unlikely to change soon. According to the 2017 Global Risk Management Report[2] (a cross-industry survey of 1,843 executives from public and private companies across 33 industry sectors in over 60 countries) carried by insurance company Aon, 59% of respondents expect an increase in business risk this year and only 7% expect a reduction. The research lists the Top 10 risks to business and the proportion of executives who believed that their companies were prepared for each (Table I).

Table I: Top 10 risks to business 2017

Rank (2017)	Business Risk	Readiness
1	Damage to reputation/brand	51%
2	Economic slowdown/slow recovery	30%
3	Increasing competition	45%
4	Regulatory/legislative changes	44%
5	Cybercrime, hacking, viruses, malicious codes	79%
6	Failure to innovate/meet customer needs	59%
7	Failure to attract or retain talent	57%
8	Business interruption	67%
9	Political risk/uncertainties	27%
10	Third-party liability	70%

Source: Global Risk Management Survey 2017. *Aon Risk Solutions*

[2] Aon plc. (2018). *Global Risk Management Survey 2017*. Retrieved from www.aon.com

Another study – this from the German asset management firm Allianz[3] - based on the views of more than 1,900 experts globally, listed cyber-incidents (followed by new technologies) as the biggest long-term risk to business and the risk that gets the most underestimated. Interesting, because in the previous edition of the same survey (as also in the table above), the potential risk of cyber-incidents (cybercrime, hacking, viruses, and malicious codes) was the one that leaders said they were most prepared for, with a 79% readiness level!

As the above instances illustrate, not only is the business risk landscape constantly changing, predicting and preparing for the next major sources of risk is becoming more challenging and difficult than ever before. Adding to the uncertainty is managerial awareness and consequent readiness to address these risks. This landscape will continue to transform amidst the confluence of newer technologies, increasing market uncertainty and heightened competitive volatility.

"After all, risk is not bad; it is simply unpredictable"
(Bazerman, 1998, p. 44)

Unfortunately, managerial surveys (both from business press and academia) tend to focus more on the downside concepts of risk, viz failure to perform or meet a target. Yet risk management is not just about prevention, but also the opportunity that it provides. Julia Graham, deputy chief executive at Airmic, an UK-based association for those involved with business risk management

[3] Allianz SE. (2018, January 18). *Allianz Risk Barometer: Top Business Risks 2018.* Retrieved from http://www.agcs.allianz.com/

explains: "*Risk management is like the brakes in a car. They give you confidence to go faster. The modern world of risk management is about releasing opportunity and allowing you to take more risk.*"[4]

However, not all business risks are the same. Some risks can be predicted whilst others are unpredictable in nature. Some risks are completely uncontrollable whereas others can be controlled, albeit at varying degrees. As the two research reports quoted above illustrate, even for the same risk (cyber-incidents) there are differences in managerial perceptions, which undoubtedly impede their preparedness for risk mitigation. Managing risks is complex, and it's only getting tougher. Companies need to navigate through these tough and unpredictable times and the executives leading them have to prepare and manage despite these risks. Managers, entrepreneurs and investors need to be on top and in control of those aspects that could disrupt their chances of success. Business risk is indeed a critical theme for management focus.

This purpose of this paper, beyond building knowledge on the domain of risk, is to develop our understanding of business risk in the managerial context. We draw from academic and managerial literature on risk and supplement it with our findings from field interviews of senior executives. We then compare the two abstractions of risk to suggest an alternate conceptualization which provides a curative understanding of business risk and has the potential to guide managers and researchers alike as they navigate through maze of business risk.

[4] McGrath, J. (2018, April 25). *Business risk is rising up the board's agenda*. Retrieved from http://www.raconteur.net

In order to validate our findings and establish the research potential of our approach, we develop select hypotheses and undertake field investigations for testing the results. We discuss our findings & its implications and develop a tool for executives to use in their risk management efforts. We highlight the academic and managerial relevance of this study and conclude with a discussion on its limitations and future research directions.

2 Theoretical Background and Literature Review

2.1 Our Understanding of Risk

Risk is a complex phenomenon and has been an active area of interest for academics as well as management. A vast body of academic research originating from multiple fields, developed over the last century has helped build our understanding of the circumstances leading to risk, attitudes & perception about risk, and the measurement & outcomes associated with risk, both at an organizational as well as individual level. Management literature has also pursued research on the subject, driven with the considerations of mitigating and managing risk. Despite this intense focus on risk, its definition and interpretation lack convergence.

2.1.1 Risk and Uncertainty

"Technically there is a difference between risk and uncertainty… Almost all authors after noting this distinction ignore it and use risk and uncertainty interchangeably." (Bettis, 1982, p. 22)

Frank Knight (1921/ 2006) was the first to distinguish between probabilities (derived from inherent symmetries or obtained through analysis of homogeneous data) or opinions made in their absence which "deal with situations which are far too unique. for any sort of statistical tabulation to have any value for guidance". He suggested that the probabilities reflected "measurable uncertainty" and opinions represented "unmeasurable uncertainty" and used this distinction to build his seminal definition of risk: *"Between the*

measurable uncertainty and an unmeasurable one, we may use the term 'risk' to designate the former and the term 'uncertainty' for the latter" (p. 233).

Despite wide use of Knight's definitions of 'risk' and 'uncertainty', they haven't met with universal acceptance. According to common usage, risk entails both uncertainty and exposure to possible consequences. Uncertainty is a state of not knowing whether a proposition is true or false. Exposure is when you care about the outcome (Holton, 2004). Unfortunately, Knight's definition only addresses the former and ignores the latter.

2.1.2 The Definition of Uncertainty

Uncertainty has been a central concept in the literature and coping with uncertainty has been long recognized as one of the most important tasks for an organization (Thompson, 1967/ 2008). The term "uncertainty" as used in strategic management and organizational theory refers to the unpredictability of environmental or organizational variables that impact corporate performance (Miles & Snow, 1978/ 2003) or the inadequacy of information about these variables (Duncan, 1972). Galbraith (1973) defined uncertainty as the difference between the amount of information required to perform a task and the amount of information possessed by the organization (as cited in Daft, Lengel & Trevino, 1987). A firm's strategy deals with the alignment of the organization to its uncertain environment.

Miller (1992) developed a framework for categorizing the wide range of interrelated uncertainties relevant to managerial decision making into three groups. The general environment uncertainties correspond to factors that affect

the business context across industries, and include political instability, government policy instability, macroeconomic uncertainties, social uncertainties and general calamities. Industry-level factors include input market uncertainty, product market uncertainty and competitive uncertainty. Firm-specific factors include operating, liability, R&D, credit and behavioural uncertainties.

Research has also recognized the multidimensionality of uncertainty. Milliken (1987) identified three types of perceived uncertainty about the environment: state uncertainty –the inability to predict the future state of the environment; effect uncertainty – the ability of managers to predict how environmental changes will impact on their organization and response uncertainty – the inability of managers to identify potential organizational actions and their outcomes. Aldrich (1979/ 2008) configured environmental uncertainty across six dimensions including environmental capacity, environmental homogeneity-heterogeneity, environmental stability-instability, environmental concentration-dispersion, domain consensus-dissensus and turbulence. Other distinctions about uncertainty include whether it is objective or subjective (Jauch & Kraft, 1986) and whether it is external or internal (Duncan, 1972). Despite the continued interest on how uncertainty is conceptualized, operationalized and measured, there is limited agreement on which dimensions are key.

The desegregation of uncertainty emphasizes the integral role of environmental, organizational as well as individual factors and their interactions. A majority of managerial decisions involve uncertainty in this multifaceted sense.

2.1.3 The Definition of Risk

"…there is no one definition that is suitable for all."
(Fischhoff, Watson & Hope, 1984, p. 124)

The dictionary commonly defines risk as the probability of loss". However, to most corporate executives, risk is defined in the same manner that U.S. Justice Potter Stewart once said about defining pornography: "…*perhaps I could never succeed in intelligibly doing so. But I know it when I see it..."*[5]

Since Knight's opus, scholars across different fields have continued to develop definitions of risk that differ markedly from each other. Rowe (1988) defined risk as *"the potential for realization of unwanted, negative consequences of an event"*(p. 24). Here *"risk"* is defined as something which can be given a numerical or *"expectation value, and to use it to compare risks"* (Bondi, 1985, p. 9), thereby reducing the concept to a unidimensional format. Holton (2004) defined risk as exposure to a proposition of which one is uncertain. At the same time, he clarified that the definition is inadequate because it depends upon the notions of exposure and uncertainty, neither of which can be operationalized.

Managers too have a different understanding of risk, which generally conflicts with Knight's definition (March & Shapira, 1987). Building upon the belief that managers usually relate risk to the possibility of unfavorable outcomes (March & Shapira, 1987), or downside risk (Miller & Leiblein, 1996), risk has also been defined as negative outcome variance. Hansson (1989) identified the dimensions of risk comparisons as the factors in risk assessment and their

[5] Jacobellis v. Ohio, 378 U.S. 184 (1964)

negative consequences (character, magnitude, distribution, location) as well as the uncertainty whether these negative consequences will take place (knowledge and probability). Yates & Stone (1992) suggested three elements of the risk construct including potential losses, significance of those losses and uncertainty of those losses.

The strategic management field still lacks an objective, empirical and generally accepted definition of risk (March & Shapira, 1987; Yates & Stone, 1992). Its meaning continues to be fraught with confusion and controversy, often unrecognized. Fischhoff, Watson & Hope (1984) identified the key sources of controversy as objectivity, dimensionality and measurability, but stopped short of offering any particular definition as the correct one. Another significant shortcoming in much of the existing risk and uncertainty literature is the emphasis on particular risks and uncertainties rather than a multidimensional treatment of the subject.

2.2 The Classification of Risk

The distinction between "business" and "financial" risk was first proposed by Frank Knight (1921/ 2006). He defined financial risk as "risk" or situations in which the randomness facing a firm can be expressed in terms of specific probabilities which are quantifiable, and as a consequence manageable and therefore avoidable. On the other hand, Knight defined business risk as "uncertainty" or situations when a firm faces some randomness that cannot be expresses in terms of probabilities of alternate outcomes, and about which only

the firm in question has some perceived insight. As such business and financial risk have also been called Knightian uncertainty and risk. For Knight, this business risk or uncertainty was the source of all major profits and losses in business.

In strategic management, business risk (also referred to as strategic risk in such context) is sometimes defined as the risk of pursuing an ineffective strategy, i.e., making incorrect strategic choices (Winfrey & Budd, 1997; Marshall, 2001). Amit & Wernerfelt (1990) separated risk into two components: market, or systematic risk ascribable to market-wide forces and business or unsystematic or idiosyncratic risk ascribable to firm-specific forces. Winfrey & Budd (1997) identified three dimensions of risk from a strategic management perspective: entrepreneurial risk, operational risk and competitive risk. Van Horne (1974) defined business risk as the risk inherent in the firm, independent of the way it is financed (as cited in Gabriel & Baker, 1980). Palmer & Wiseman (1999) described risk in organizations either as managerial choices associated with uncertain outcomes (managerial risk taking) or organizations experiencing volatile income streams (organizational risk).

Culp (2002) distinguished between event-specific, financial and business risks. Event-driven definitions differentiate types of risk based on nature of the event that might trigger a loss. Financial risks are risks that a firm is not in the business of bearing whereas business risks are the risks that the firm must bear in order to operate its primary business. Kaplan & Mikes (2012) proposed a three-tier categorization to allow managers understand the qualitative

distinctions between the types of risks that organizations face, and provided approaches for managing each type or risk: preventable risks (those arising from within the organization, controllable and which ought to be eliminated or avoided); strategic risks (those a company voluntarily assumes in order to generate superior returns from its strategy) and external risks (arising from events outside the company, beyond its influence or control). Srivastava (2016) expressed the relationship between risk type (idiosyncratic to systematic risk affecting at a firm, industry or macroeconomic level) and management control and correlated it with the strategic and competitive actions of the firm (product market selection, product & customer portfolios and marketing strategy & mix).

Despite the fact that business risk has been the core task of management for ages (Crouhy, Galai & Mark, 2006), the literature is far from unanimous on the definition of business risk. Within these multiple classifications, the term 'business risk' has been used in various and at times diametrically opposite contexts, sometimes defined as the aggregate of all risks (Marshall, 2001) and some other times as the residual risk type after all other risk types are identified (van Lelyveld, 2006). Amidst this continued confusion, plethora of definitions and multiple interpretations, the perspectives of executives grappling with and managing through these risks appears missing. There is a clear need to have a better understanding of business risk, particularly from the managers perspective.

2.3 Managerial Risk Taking

Most strategic management literature on risk assumes managerial or organizational risk preferences influence strategic choices, that is, the risk characteristic of alternatives form a substantial factor in managerial evaluation of such alternatives. As such scholars refer to "risk taking" (e.g., MacCrimmon & Wehrung, 1986; March & Shapira, 1987) and study the relations between antecedents associated with risk preferences and firm risk.

Two primary theories have shaped behavioural work on risk taking: Cyert & March's behavioural theory of the firm (1963/ 2001), and Kahneman & Tversky's prospect theory (1979). The behavioural theory of the firm is a group-level theory that describes the behaviour of organizations composed of a coalition of individuals or groups. It suggests that organizations compare their performance to aspiration levels and that this comparison shapes their risk preferences. When organizations are performing close to a target (i.e., aspirational level), they appear to be risk-seeking below the target… and risk averse above it. Prospect theory is a theory of individual behaviour. It relies on the observation that people are loss averse – they *"find the displeasure of losses to be greater than the pleasure of equivalent magnitude gains"* – and thus tend to engage in behaviour that minimizes losses relative to a reference point, which can be shaped by aspirations, expectations, norms and social comparisons. This line of research implicitly assumes managerial or organizational risk preferences explain risk taking strategies, and most of these studies tie factors associated with managers' collective risk propensity directly

to organizational risk with little attention given to the strategic choices that mediate the relation.

A third line of theory development – Jensen & Meckling's (1976) agency theory – recognizes the moderating role of governance mechanisms on managers' expressions of risk preferences that may conflict with the interest of risk neutral shareholders. Integrating concepts from these, viz, behavioural theory of the firm, prospect theory and agency theory, the behavioural agency model (Wiseman & Gomez-Mejia, 1998) assumes that executives are loss averse and that their compensation plans create reference points that shape their prospect framing and determine their risk taking. Finally, the upper echelons theory (Hambrick & Mason, 1984) suggests that executives construe reality as a product of their *"orientations"* which eventually translates into their strategic choices involving risk taking. These executive orientations are formed by two major dimensions of personal characteristics, psychological properties and observable experiences, and are the primary focus of the studies on managerial risk taking. In recent times some studies have even begun to adopt multiple frameworks of risk taking to examine the interactions between mechanisms.

2.4 Risk Taking and its Antecedents

Baird & Thomas (1985) proposed a contingency model of strategic risk taking, hypothesizing that major variables in the external and internal environment of the organization impinge on the managers, whose resultant risk estimates are seen as interacting with the nature of the strategic problem under consideration

to determine the willingness of the firm to accept the risk of that strategy. They classified these variables into five categories - external environment, industry, organization, decision maker and strategic problem - identifying component variables for each along with the direction of the hypothesized relationship and research or published opinion to support the hypothesis where available. In the vast literature on risk taking, scholars have since considered an array of additional factors that cause decision makers to vary in their risk taking tendencies or to deviate from objectively warranted behaviours.

Building over the previous effort, we surveyed premier journals in the management field (refer Podsakoff, Mackenzie, Bachrach, & Podsakoff, 2005) along with those demonstrating a specific focus on managerial risk taking to develop an updated list of industry, organizational and decision-maker (chief executive) variables hypothesized to effect managerial risk taking. We summarize our findings in Table II.

Hoskisson, Chirico, Zyung & Gambeta (2017) surveyed 148 different articles across leading management journals and developed a comprehensive framework of managerial risk taking to include the antecedents and moderators based on the theories reviewed and the associated managerial risk taking outcomes. However, their framework does not consider the third stream of literature which, albeit limited, delves into the process of risk taking itself.

Table II: Effects of Industry, Organization & Chief Executive (CEO) Variables on Risk Taking

Variable	Effect on Risk Taking*	Source
Industry		
Number of competitors	+	Porter, 1980
Competitive rivalry	+	Porter, 1980
Number of suppliers	+	Porter, 1980
Number of customers	+	Porter, 1980; Scherer, 1980
Capital intensity	-	Shepherd, 1979
Vertical integration	-	Lenz, 1980
Capacity utilization rate	-	Porter, 1980
Mobility barriers	-	Caves and Porter, 1979
Life cycle	-	Fox, 1973; Hofer, 1975
Organization		
Life cycle	-	Cooper, 1979
Age	-	Cooper, 1979; Desai, 2008
Size	-	Beaver, Kettler & Scholes, 1970
Operating experience	+	Desai, 2008
Ownership (Family firms)	-	Chrisman & Patel, 2012
Resources	+	Audia & Greeve, 2006
Performance	+,-	Bowman, 1980; Singh, 1986; Miller & Chen, 2004 Desai; 2008
Organizational slack	+	Carter, 1971; Singh, 1986
Leadership	+,-	Shah & LaPlaca, 1981: Desai, 2008
Legitimacy	-	Shah & LaPlaca, 1981
Divisionalized structure	-	Armour & Teece, 1978
Decentralization	+	Singh, 1986
Market share	-	Anderson & Paine, 1997
Aggressive goals	+	Grey & Gordon, 1978
Group decision making	+	Myers & Lamm, 1976
Organizationa culture	+,-	Mihet, 2013
Corporate Social Responsibility	-	Harjoto & Laksmana, 2016
Corporate Governance	+	John, Litov & Young, 2008
Diversification	+	Eisenmann, 2002
Decision Maker/ Executive (CEO)		
Age	+,-	Vroom & Pahl, 1971
Tenure	+,-	Hambrick & Fukutomi, 1991; Simsek, 2007
Marital status	-	Roussanov & Savor, 2014
Stock options	+	Eisenmann, 2002; Sanders & Hambrick, 2007
Self-confidence	+	Schaninger, 1976
Experience	+,-	Vroom & Pahl, 1971; Funk, Rapoport, & Jones, 1979; Menkhoff, Schmidt & Brozynski (2006)
Hubris	+	Li & Tang (2010)
Knowledge	+	Funk, Rapoport, & Jones, 1979
Narcissism	-	Chatterjee & Hambrick, 2011
Preferences, biases, heuristics	+,-	Kahneman & Tversky, 1979; Hogarth & Makridakis, 1981
Capability cues	+	Sitkin & Weingart, 1995; Chatterjee & Hambrick, 2011
Mood	+	Williams & Voon, 1999

*The +/- signs indicates the relationship between the variable and risk-taking.

Adapted from and updated over Baird, I. S., & Thomas, H. (1985). Toward a contingency model of strategic risk taking. *Academy of Management Review*, *10*(2), 230-243

2.5 Risk Behaviour as a Process

Decision-makers facing risk make assessments of the given situation, and based upon their perceptions, determine a subsequent course of action. Sitkin & Pablo (1992) focused on the process of making risky decisions and proposed a mediated model of the determinants of risky decision making, theorizing that the effects of a number of previously examined variables on risk taking were not direct but were instead mediated by risk propensity (willingness) and risk perception. Sitkin & Weingart (1995) proposed a revised model suggesting that risk propensity and risk perceptions were likely shaped by a number of specific characteristics, some of which (e.g., problem framing) can have both a direct bearing on risky decisions as well as a mediational effect through risk perception.

Risky decision making involves an assessment of whether an unfavourable outcome might occur (possibility of loss), an assessment of the range of possible unfavourable outcomes (probability of such loss), and an assessment of the extent to which possible unfavourable outcomes can be managed or controlled (exposure to hazard or danger). It also requires an assessment of the riskiness (or relative safety) of available options leading to a choice from possible alternatives (MacCrimmon & Wehrung, 1986; Sitkin & Pablo, 1992).

Baird & Thomas (1985) identified the major steps necessary in dealing with risk as risk identification, risk estimation and risk evaluation. Risk identification concerns the reduction of descriptive uncertainty in regard to the risk situation. Risk estimation involves reducing measurement uncertainty and addresses the

difficulties in estimating relevant values, facts and uncertain events. Risk evaluation concerns those strategic actions leading to either risk acceptance or rejection and assessing the quality of those actions. They suggest that these processes overlap and together provide a basis for risk assessment. However, scholars studying decision-making behaviour in risky organizational situations have tended to focus on the direct effects of one or more determinants of this behaviour, which fails to reflect the complex set of influences apart from leading to contradictions and potentially inaccurate conclusions.

Williams, Zainuba & Jackson (2008) further built upon these models by testing a structured risk-assessment questionnaire among 149 managers from a variety of industries. They found that managerial risk perception increases with increasing outcome uncertainty, potential for losses, personal consequences and with negative framing of situations or decreasing willingness for risk. In their study, perceived riskiness did not influence risk intentions and managerial risk taking was determined primarily by assessments of magnitude of likely potential gains and positive framing of situations.

2.6 Risk Measures and Outcomes

Bowman (1980) stated that *"risk is the concept which captures the uncertainty, or more particularly the probability distribution, associated with the outcome of resource commitments… while the risk may be regarded before the resource commitment (ex ante), the effects and the aggregation of numerous commitments can only be observed over time (ex post). Therefore, the variance*

of profit, is used as an accepted measure of risk." Bowman found negative associations between corporate risk and return, which he called the *"risk-return paradox"* since it contradicts the positive risk-return relation of financial portfolio theory.

Bowman's study is often cited as the starting point which set of a continued stream of research examining the role of risk in strategic management. Scholars have since used a variety of risk proxies in their studies mostly using accounting and stock returns data. Most often, researchers have used variability in accounting returns (ROA or ROE) over time or the capital asset pricing model's (CAPM) systematic and unsystematic risk estimated using stock returns data. Some studies have tried using newer (and often forward-looking) perspectives like analyst forecasts, the firm's market position or a combination of different measures. Ruefli, Collins & Lacugna (1999) and Bromiley, Miller & Rau (2006) provide a comprehensive review of studies on risk measures, and it remains a topic of intense debate amongst scholars.

Despite the continued research on the subject, an extensive review of risk literature suggests that the outcomes of managerial risk taking remain less studied than the antecedents (Hoskisson, et. al., 2017). Devers, Cannella, Reilly & Yoder (2007) caution that firm risk as captured by accounting measures may not reflect executives' attitudes and biases toward risk. Except for some recent works (Gómez-Mejía, Haynes, Núñez-Nickel, Jacobson, & Moyano-Fuentes, 2007; Chrisman & Patel, 2012), use of primary data to measure managers' risk behaviours & reference points and non-financial

outcomes of risk taking behaviour have rarely been studied. Instead, most choices appear to have been driven by data availability, computational ease and prevailing precedents in the field.

2.7 Overview of Risk Literature

The extensive academic research on risk covering strategy, organizational & social sciences and finance provides a panoramic understanding of the phenomenon of business risk. Social sciences have primarily delved around the understanding of attitudes and preferences towards risk and the action of risk taking from a behavioural standpoint. Much of the research has focused on explaining risk taking in the context of established theoretical frameworks as well as developing newer theories, including adopting multiple frameworks of risk taking to examine how the mechanisms interact. Simultaneously, research has also focused on identifying newer variables influencing organizational and individual risk attitudes & preferences and risk assessments. In parallel, the field of finance has evaluated the outcomes of risk taking mostly in terms of ex-post measures and driven to a large extent by data availability. Table III summarizes the spectrum of risk research discussed in terms of their field of origin, theoretical setting and focus dimensions.

Table III: A Conceptual Representation of Risk Studies in Academic Research

Field of Origin	**Strategy**	**Social Sciences**		**Finance**
Theoretical Setting	Contextual	Attitudes & Preferences	Process	Measurement & Outcomes
Focus Dimensions	Environment Industry Firm/ Group Individual Problem	Risk Preference Risk Propensity Risk Perception Risk Taking (Action)	Risk Familiarity Risk Identification Risk Evaluation Risk Estimation	Financial Performance Income Stream Uncertainty Other Measures

Much of the literature on risk – emerging as it does from different streams of study, serving diverse research objectives, spanning myriad theoretical frameworks and using multiple databases & measures – is hard to compare. Amidst this seeming complexity, some general findings emerge. First, and most fundamentally, risk has multiple dimensions reflecting the different interests of the stakeholders. Second, these risk dimensions influence performance. Third, many constructs influence risk taking. Fourth, certain factors appear to mitigate risk behaviour (Bromiley, Miller & Rau, 2006).

We provide an alternate representation of the conceptual model emerging from managerial risk taking research till date (Figure I) and call this view as **the black box view of risk taking**. Just as the black box is vitally important in the case of a plane crash - since it helps investigators explain the events leading to and reasons for the crash - this approach has helped us develop our understanding of risk taking, and therefore business risk to a great extent.

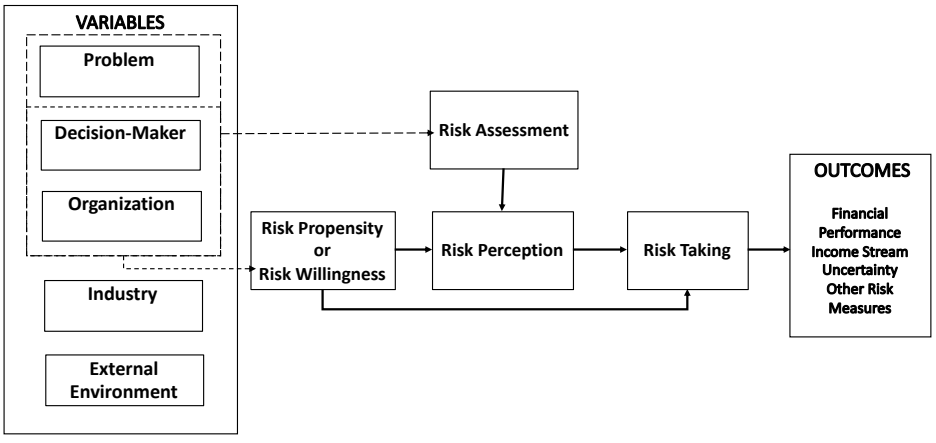


Figure I: The Blackbox of Managerial Risk Taking

We next review research specifically looking into the managerial perceptions of risk and compare it with the view emerging from the literature review.

2.8 Managerial Risk Behaviour

"..not only managers fail to follow the cannons of decision theory, but the way they think about risk do not easily fit into classical theoretical conceptions of risk."(Shapira, 1995, p. 128)

Despite the significant impact of managerial risk taking on business and society, generally the empirical investigations of decision making in organizations has not been directed on the conceptions of risk and risk taking held by managers. Empirical investigations of risk in decision making don't tend to reflect on managerial behaviour (Vlek & Stallen, 1980; Slovic, Fischhoff & Lichtenstein, 1982; March & Shapira, 1987). The studies focused on the risk activities of actual managers have been limited, and even these fail to reveal a clear-cut picture of managerial risk behaviour, straying as it does from our theoretical understanding of risk (MacCrimmon & Wehrung, 1990; March & Shapira, 1987). Organizational behaviour too often contradicts established risk theory (Sitkin & Pablo, 1992; Sitkin & Weingart, 1995).

Critics have highlighted the complications with decision theoretic conceptions of risk when they are taken as descriptions of the actual processes underlying choice behaviour. Individuals tend to ignore possible events that are very unlikely or very remote, regardless of their consequences. Individuals look at only a few possible outcomes rather than the whole distribution, and measure variation with respect to those few points. Individuals are more comfortable with verbal than with numerical characterizations of risk, even though the translation of verbal risk expressions into numerical form shows high variability and context dependence. The likelihoods of outcomes and their values range into calculations of risk independently, rather than as their products. The

criticisms seem to indicate that the ways in which human decisions makers define risk may differ significantly from the definitions of risk in the theoretical literature. Managerial risk taking propensity also varies across individuals and across contexts and appears to be affected by numerous factors.

Our understanding of managerial perceptions of risk is primarily based on Shapira (1995), MacCrimmon & Wehrung (1990) and March & Shapira (1987) which together provide some consistent observations on how managers define risk, their attitudes toward risk, and how they deal with risk. Managers believe that risk taking is essential to success in decision making and associate it as an essential component of their role recognizing *"the emotional pleasures and pains, the affective delights and thrills of danger associated with risk taking"* (Shapira, 1995, p. 58). However, they see risk in ways that are both less precise and different from risk as it appears in decision theory. Specifically, three differences from decision theory are obvious. First, most managers do not treat uncertainty about positive outcomes as an important aspect of risk. Second, most of them see uncertainty as a factor in risk and are much more likely to use a few key values to describe their exposure than they are to compute or use standard summary statistics grounded in ideas of probability. Third, recognizing that there are financial, technical, marketing, production, and other aspects of risk, most managers felt that risk could not be captured by a single quantifiable construct. In other words, individuals do not trust, do not understand, or simply do not use the precise probability estimates as measures of risk.

"To Take Risks or To Manage Risks?" (Weber, 2016, p. 3)

Perceptions of risk are mostly an intermediate construct to explain behaviour and decisions in environments of risk and uncertainty. One could take existing risk as a given and select among available action alternatives as a result of one's appetite for risk (risk taking) or try to modify existing levels of risk to adjust them to one's appetite for risk (managing risk). "Risk taking" is the typical behaviour studied by decision researchers. However, MacCrimmon & Wehrung (1990) found that managers often denied *taking* risks, but instead saw it as their responsibility to *manage* risks.

Clearly the distinction between taking and managing risk hinges on the perceived degree of control available to decision makers to modify the current or future consequences of available response options (Weber, 2016). They seek to modify risks, rather than simply accepting them; and they assume that normally such a modification will be possible. They do this by focusing on ways to reduce the danger while retaining the gain, by either rejecting the estimates or trying to change the odds. Most managers tend to believe that they can do better than is expected, even after the estimates have been revised. Thus, the tactics of *"adjustment"* (MacCrimmon & Wehrung, 1990) or *"eliminating the unknowns"* and *"controlling the risk"* (Shapira, 1995) are standard executive responses to risk.

"Risk does not exist 'out there', independent of our minds and cultures, waiting to be measured" (Slovic, 1992, p. 119)

Empirical studies of risk taking indicate that risk preference varies with context. Specifically, the acceptability of a risky alternative depends on the relation

between the dangers and opportunities reflected in the risk and some critical aspiration levels for the decision maker, which also tends to shift focus away from the dangers involved in a particular alternative and toward its opportunities. This tendency of managers to evaluate alternatives so as to focus on a few key aspects of a problem at a time is a recurrent theme in the study of human problem solving. In some of these theories, there is a single critical focal value for attention, viz., the aspirational level that divides subjective success from subjective failure. Other studies confirm the importance of two focal values rather than a single one, mostly a target level of performance and a survival one, and ones' position relative to the two focal values dominates the risk aversion or risk taking behaviour.

March & Shapira (1987) explored the relation between decision theoretic conceptions of risk and the conceptions held by executives, and found three major differences: managers are quite insensitive to estimates of the probabilities of possible outcomes; their decisions are particularly affected by the way their attention is focused on critical performance targets; and they make a sharp distinction between taking risk (where skill or information can reduce the uncertainty) and gambling (where the odds are exogenously determined and uncontrollable). These differences indicate that the behavioural phenomenon of risk taking in organizational settings will be imperfectly understood with a classical conception of risk.

Managers also have a strong normative reaction to risk and risk taking. They care about their reputations for risk taking and are eager to expound on their

sentiments about the deficiencies of others and on the inadequacy of organizational incentives for making risky decisions intelligently. Thus, the rhetoric is two-pronged where on the one hand, risk taking is valued and treated as essential to innovation and success, at the same time risk taking is differentiated from gambling. In conclusion, we can surmise that managers fail to follow the canons of decision theory, and the ways they think about risk does not fit easily into classical theoretical conceptions of risk.

2.9 Gaps in Our Understanding

Risk literature is broad and each of the functions go very deep, but they operate in silos. Managers don't look at risk from an environmental, strategic, market or financial standpoint every day. Instead they tend to have an integrated and multidimensional perspective of risk.

> "*We should expect a firm facing technological uncertainty to respond very different than a firm facing uncertainty regarding its relationships with key suppliers*" (Bromiley, Miller & Rau, 2006).

The job of a manager is to manage, including for risk. Management of risk is not just dependent upon risk attitude and action subject to different influences but is also dependent upon the nature of the particular risk. Specific to a risk and its characteristics, its perceptions could be different for different individuals depending upon how, in what context and by whom the risk is perceived. Research should be able to distinguish between the differences in terms of risk characteristics and the effects of environment, industry, firm, manager and

context on these risk characteristics and thereby on managerial perceptions of the risk.

Managerial risk perceptions result in variances in the action of risk taking & risk management as well as the differences in the risk outcomes. The action of risk management is much more complex than the current interpretation of risk action - near dichotomous or at best linear (risk aversion to risk taking) - would imply. Good managers look at managing or controlling risk, which can lead to different outcomes including some which are desired and sought.

"…there remain sufficient gaps in our understanding…"
(Bromiley, Miller & Rau, 2006).

Despite the vast coverage of risk literature, there remains significant gap in our knowledge of how managers perceive risk and its controllability, and the factors which influence it. What also remains unexplained is how the difference in perceptions manifests itself in the approach to management of a particular risk. There is also an opportunity to better understand the relationship between risk and its outcomes. Most importantly, we need to better connect managerial perspectives of risk with their and thus their organizations' response to risk.

We earlier summarized our current understanding as *the black box view of risk taking*. Just like the black box is vitally important in the case of a plane crash - as it helps investigators explain the events leading to and reasons for the crash - this approach has helped us develop a diagnostic understanding of business risk. However, just like the black box in the aircraft is of little help to the pilot and

the plane while it is in the air, the current approach (both in terms of focus, explanation and measurement) has limited relevance for practicing managers in dealing with the day-to-day risks associated with running their businesses, viz., the curative process of risk management.

3 Research Objectives and Methodology

3.1 Research Objectives

A managerial focus is essential in improving our understanding of business risk. The perspectives of executives grappling with and managing through the challenges of business risk serves both the academic and the managerial research objectives. First, it can address some of the gaps in our current understanding, and thus build and extend the theory of risk. Second, it can provide guidance for practicing managers in assessing and managing business risk in their firms.

This research attempts to build upon the current outlook and our objectives are threefold: develop insight into the domain of business risk from the view-point of managers; build understanding of managerial perspectives of business risk; explore the factors which influence managerial actions in dealing with business risk.

3.2 Pilot Study

Given the complexity surrounding business risk, it is difficult to have a clear view and knowledge on what to count at this stage of the research process. In order to frame the study scope, we had discussions with two set of informants and the research draws heavily on their knowledge (Yin, 2003). Discussions were carried out with five business academicians - from marketing, operations,

strategy, social sciences and risk analysis - at three large Indian universities. Their views provided guidance both in developing the research approach and also in initiating the literature review. Later, a second set of informants consisting of three senior executives (chief executives of firms based out of Bangalore, Delhi and Mumbai) helped define sample for data collection and craft subsequent interview guide. All meetings were conducted in person over three months. The pilot study helped us develop familiarity with the context, gain insight into the main issues and refine the scope of the study.

3.3 Research Methodology

Based on the discussions with experts, it was decided that field research through in-depth interviews would be appropriate for building the framework (Bonoma 1985; Eisenhardt 1989; Zlatman, LeMasters & Heffring, 1982). We considered the positivistic rather than the interpretive approach to field research in order to ensure the research complemented the insights elicited from executive interviews with perspectives obtained through detailed review of literature and leading to the development of conceptual themes and hypotheses (Miles & Snow, 1978/ 2003). This discovery-oriented, qualitative, practitioner-based approach (Parasuraman, Zeithmal & Berry, 1985) is designed to tap the "cause and effect" maps of managers (Zaltman, LeMasters & Heffring 1982) around the construct of business risk.

The field interviews in positivistic studies are typically also the first stage leading to a quantitative phase (e.g., Kohli & Jaworski, 1990; Jaworski & Kohli

1993) or a catalyst for the development or refinement of a positivistic model or framework (e.g., Miles & Snow, 1978/ 2003; Burgelman, 1983; Workman, Homburg & Gruner, 1998). We thus decided to employ a two-tiered multi-method structure for data-collection. At the second phase of the research we tested the proposed framework and consequent hypotheses through a survey capturing responses from senior managers via a structured questionnaire.

4 Research (Phase I): Field Interviews

For the field research, data was collected through in-depth interviews with senior managers. Previous literature has recommended the use of purposive sampling for obtaining a knowledgeable sample that can provide rich insights into an emerging construct (Patton 1990). Therefore, it was important to tap a wide range of contexts, experiences and perspectives in the course of data collection (Bendapudi & Leone, 2002).

4.1 Sample Size & Characteristics

In total, the field research consisted of in-depth interviews with 16 C-suite executives (managing directors, chief executive officers and functional/ business heads), consistent with the sample sizes recommended for exploratory research (McCracken, 1988; Latham[6], 2014). These included twelve senior executives (Managing Director & CEO/COO levels) in three Indian cities (Bengaluru, Delhi & Mumbai), representing diverse industries (fashion, foods, retail, automotive, materials, insurance, pharmaceuticals & IT) and firms operating across the value network (manufacturing, channels and services). Additionally, along with one of the CEOs, three functional executives (CFO, VP – HR and General Manager) responsible for the retail division of the same conglomerate (~$2B turnover), were interviewed to check for convergence or divergence of senior management perspectives.

[6] Latham, J. R. (2014). Qualitative sample size: How many participants is enough? Retrieved from http://www.drjohnlatham.com/many-participants-enough/

The executives interviewed had an average experience of 24 years (10 years in company, 14 years in industry), well distributed with minimum 10 and maximum 35 years (additional sample characteristics detailed in Table III). Whereas most of the interviewees were from established companies, in order to get a more rounded perspective the founder/ CEO of a start-up was also interviewed. The sampling process ceased at saturation, as indicated by information redundancy.

Table IV: Sample Characteristics (n=16)

Respondent Title		Tenure		Industry Sector		Company Profile	
MD and/or CEO	12	> 10 yrs	7	Manufacturing	11	MNC	5
COO/ Business Head	2	5 - 10 yrs	4	Services	4	India - Public	7
CFO	1	2 - 5 yrs	4	Technology	1	India - Private	4
CHRO	1	< 2 yrs	1				
Company Customers		**Operations**		**Company Age**		**Employees**	
B2B	5	Upstream	4	> 30 yrs	5	> 10,000	3
B2C	11	Downstream	12	20 - 30 yrs	5	5,000 - 10,000	3
				10 - 20 yrs	3	1,000 - 5,000	5
				< 10 yrs	3	< 1,000	5

4.2 Interviews

A standard format was followed for the interviews[7]. After a brief description of the research project, interviewees was asked for their views through the following questions, worded to elicit responses in a nondirective manner (McCracken, 1988).

- What does the term "Business Risk" mean to you? What are the different types of business risk that your company faces?
- What capabilities are critical in dealing with/ managing these risks?
- What does 'this' capability mean to you? How do you acquire it?
- When you are better able to manage these risks, what will be the outcome?

[7] SMU Institutional Review Board Approval Number: IRB-16-103-A111(1016).

These questions provided a structure for the interviews, but it was frequently necessary to explain and clarify some of the questions, as well as probe deeper with additional questions in order to elicit examples, illustrations and insights including more details around potentially interesting ideas. As the field interviews progressed, notes were reviewed on an ongoing basis so as to identify emerging ideas, define specific themes, capture novel insights and use them to refine directions for subsequent interviews.

We conducted all the interviews personally, and all (apart from one) were conducted face-to-face across the three cities (the lone exception was a video conference). The personal interviews typically lasted an hour or more and were audiotaped unless the interviewee had requested otherwise.

4.3 Analysis and Interpretation

The interviews provided us an unique view of how managers consider and deal with business risk. We transcribed the audiotaped interviews and reviewed them along with the notes from the non-recorded interviews. We followed the grounded theory methodology involving open, axial, and selective coding to identify key themes and insights (Straus & Corbin, 1998).

At the onset, open coding of the interview transcripts and notes helped explicate the main ideas from each interview. A preliminary coding plan was developed to list the key themes and insights, provide labels for them and seek examples to explain the meanings (Ulaga & Reinartz, 2011). These were selected based

on their applicability beyond a specific firm or industry context, mention from multiple participants and ability to provide interesting and useful conclusions (Tuli, Kohli & Bharadwaj, 2007). In the second stage each of the selected constructs were defined and their properties specified using axial coding. The relationships between different themes and the constructs developed as also inter-relationships between the constructs were investigated, which helped further refine the coding plan (Straus & Corbin, 1998). Finally, all the constructs were integrated into an overall framework and the wordings of the definitions and the selected examples were refined.

As a check on the reliability of the findings, the coding was reviewed by an independent judge and one of the participants. They were provided a summary report which included the framework, constructs and their definitions and the cited examples. The reviewers provided certain recommendations to change wording in order to increase their conceptual clarity, which were incorporated. Both indicated their agreement with the overall structure and framework. Overall, the results stood the application of the grounded theory criteria of fit, relevance, workability and modifiability (Glaser, 1998) and helped in the development of the conceptual framework of this research.

5 Findings from Field Research

In this section, we first present the key findings and interpretations from the field research. Given the goals of this study, we also provide a comparison of the findings from the field study, with the extant view in literature. Subsequently, integrating both, we propose an alternate conceptual framework of managerial perspectives towards business risk.

5.1 The Domain of Business Risk

"Even in the most uncertain situation it is very critical that you are able to protect your performance against the goal you have set for yourself."
MD & CEO of a $400M publicly held Indian fashion retail company

The view of business risk that emerges from the executive interviews is significantly different from the way it has been defined in literature. Apart from extremely rare *'black swan'*[8] occurrences, most interviewees did not consider business risk as episodic or limited to a particular event. They saw business risk as a development – *a change in situation, circumstance, condition or state* - which is spread over time and effected their business.

The interviewees saw business risk as unavoidable, less predictable and not entirely within their control. According to them, business risk could emerge even from reasoned decisions but still result in deviations from the expected with potentially adverse consequences. While managers talked about

[8] Taleb, N. (2008). *The Black Swan: The Impact of the Highly Improbable*. London, UK: Penguin.

addressing the immediate symptoms, they appeared to be more involved in its cause-effect and showed an ambidextrous approach towards its management.

"*You'll find this consumer behaviour both a risk and an opportunity because you find people moving on from customized to more of readymade stuff… this drives a movement: from where I have strong and direct distribution into the part where we don't have presence…we need to capture that. So that's a risk. But yes, equally is an opportunity.*"
MD (India) of a $2B MNC supplying materials for multiple industries

None of the interviewees talked about avoiding risks. They did not appear to consider risk avoidance and did not believe in inaction or ignoring the risk. They considered management of business risk as their critical responsibility. Most interviewees believed that if controlled and managed effectively, business risks could even yield positive business benefits. For them it appeared less about mitigating the risk as much as managing it and leveraging it for business advantage.

5.2 Classification of Business Risk

Practicing managers tend to classify risks faced by their business based on the type and source of risk. The field interviews provided extensive insights into the types of business risks as viewed by managers and multiple items were generated as response to types of business risks. We coded the risks mentioned by the interviewees and from the similarities in references, identified 14 sub-groups of risks as second-order categorization. From this pool of items, a subset of seven third-order categories were selected using the criteria of uniqueness and the ability to convey *"different shades of meaning"* (Churchill, 1979).

Table V: The 7 Facets of Business Risk

ENVIRONMENTAL RISK	EMPLOYEE RISK
Environmental Risk	Employee Risk
Black Sawn events	*Mix (experience, talent & both)*
Government/ Policy induced	*Productivity*
Economy or environment induced	*Engagement & motivation*
ESR: Environment (ecology/ sustainability)/ Safety/ Health	*Employee expectations (employee as customers)*
Regulatory (adherence)	Talent Risk
Industry/ Market Risk	*Can we deal with uncertainties / exploit new opportunity? Deficit/*
Innovation in adjacent industries	*Can we find/ hire them? Availability.*
Market and consumption growth	*Are we able to retain them? Develop (T&D) exiting people?*
Ability to identify trends & emerging opportunities	*Ahead of the game (market/ competition)?*
Ability to harness identified trends & emerging opportunities	Leadership Risk
Onslaught of discontinuity	*Sense-making amidst rapid change*
	Transformational management, agility
COMPETITIVE RISK	
Existing competition: Increasing, newer offerings	OPERATIONAL RISK
Emergent competition: Newer players, newer forms of competition	*Operational Excellence: Plan vs Variance*
Change: competitive landscape, value equation (pressure on costs/	*Execution engine*
Business Model impact: robustness, balance between old/new	*Process and systems*
	Asset productivity (store, desk)
CUSTOMER RISK	*Supply chain customization & management*
Changing Customer Habits & Preferences	*Supply chain ability*
Emergence of new customers	*Supply chain responsiveness*
Changing customer persistence/ loyalty	
Ability to gain/ retain consumer confidence	TECHNOLOGICAL RISK
Increasing consumer awareness/ expectations (pressure on costs/	Digital Technology
Changing Market Characteristics	*Understanding the digital landscape*
Transformation of markets	*Awareness and use of digital tools*
Relevance of existing value proposition	Overall
Effectiveness in reaching target users	*Understanding changes & resultant challenges (due to technology)*
Managing customers	*Understanding of technological solutions*
	Finding right technology for business operations
ORGANIZATIONAL RISK	*Embracing technology solutions*
Change Management	*Convergence of technology across functions*
Acknowledge, internalize, manage and respond to market changes	Insights
Dinosaur mode –lack of acknowledgement/ internalization	*Availability/ capturing of meaningful data*
Management agility, Organizational agility or lack thereof	*Using available information for decision making*
Culture	*Generating required information for decision making*
Retaining, modifying or changing culture	Information Technology
Empowerment, Experimentation & Innovation	*Security, Privacy etc.*
Dealing with ambiguity	*IT Tools*
Twin-challenges of short-term & long-term requirements	
Coding Legend and Meaning	
First-order categories	*Representative quotes - specific manifestation of risks*
Second-order categories	Sub-groups of risk types
THIRD-ORDER CATEGORIES	FACETS OF BUSINESS RISK

We call this typology involving the distinct categories as the **seven facets of business risk**. These are environmental, competitive, customer-led, organizational, employee-led, operational and technological risks. Table V gives a representative list of the different risk types including a selection of

quotes as mentioned by the interviewees, organized as per our coding into the 14 sub-groups and the seven facets of business risk.

Based on the findings from our field interviews, we are able to offer a definition of business risk in the context of this research. We define *business risk* as *developments emanating from environmental, competitive, technological, customer, operational, employee or organizational factors which cause a deviation from the expected with potentially adverse consequences on the planned outcomes of the firm*.

Next, we elaborate on each of the facets of business risk through the impressions of the interviewees along with our observations.

5.2.1 Environmental Risk

"It hit everyone! Of course Maggi[9] *was banned & we were not, but the category dropped 90%. It was a crisis!"*
MD & CEO (India) of a $4B MNC processed foods company

"One of our biggest worries is if some unforeseen event hits our business. Geo-political risks are a major concern given our extensive presence across Asia & Africa."
MD of a $1B Indian consumer goods company

Environmental risks may arise from catastrophic events or as the outcome of multiple factors (economic, social, political, legislative), actions of different players (including governments, non-profit bodies and consumer groups) or even from the changes in the native or adjacent industries. Increasing

[9] Shashidhar, A. & Dubey, R. (2017, December 4). "Maggi is the worst crisis that we have faced in the 104 years of our existence in this country". Retrieved from http://www.businesstoday.in/opinion

information access has led to much greater awareness leading to heightened activism and stronger legislation, thereby increasing the susceptibility to environmental risks. This calls for much greater degree of responsiveness from firms and the executives leading them, than before.

"Government pushing draconian price-controls, increasing span of price-controls…"
Chairman & CEO (India) of a $12B pharma MNC

We observed that in certain industries (e.g., pharma) environmental factors like legislative uncertainty can have an overbearing effect, clouding perceptions and blinding executives on the impact of other forms of business risk.

"I think all of the businesses today are facing a significant amount of compliance risk"
MD (India) of a $2B MNC supplying materials for multiple industries

We also noticed higher mention of environmental risks from the managers of MNC companies compared to their counterparts in Indian companies.

"Data privacy or data security being hacked into is very significant risk for us. That is a recent threat which is highly worrisome."
Global COO of a $200M legal processing outfit

Interestingly, what might appear as an environmental risk (privacy & data security) for some firms could be a critical operational risk for another. Thus, despite the severity of environmental risks, many interviewees viewed them as an opportunity to address structural or operational issues within their business.

5.2.2 Competitive Risk

"We have a new competitor in the category. They are strongly funded and very aggressive."
MD & CEO (India) of a $4B MNC processed foods company

"Competition from generics is bringing prices down"
Chairman & CEO (India) of a $12B pharma MNC

Competitive risks manifest themselves in the form of increasing or newer offerings from existing competition, through newer players and newer forms of competition, in similar or even at different nodes in the value chain. The interviewees referred to the onset of greater competition and more intense competition both from established players and well-funded new entrants with new play-books entering the market. The opening of the economy, easier access to venture capital and emergence of technology-led business models has increased the overall competitive volatility across most industries.

"Competition is a risk only if they deliver terrific customer benefit. But all of them are price-warriors."
CEO of a $100M Indian departmental/ speciality retail chain

Most managers looked at competitive risk more in terms of the resultant impact on the industry landscape, their value equation (pressure on costs, margins) and the implications for their business model, rather than in terms of the direct impact of the competitor's presence.

"Retail came with constraints... of real estate, space, adjacencies, locations … and we were able manage it. This new one has got no constraints. No constraints of prices, distribution... they give discounts, huge promotions, door delivery, return when you can, whatever you want… too many things are happening, which is disturbing our existing model of working. It won't work in the future."
CFO of a $2B Indian conglomerate in foods, fashion & retail

The executives differed in their view on the longevity of the competitive impact to their business and even on the sustenance of the newer business models. We observed a noticeable difference between managerial approach towards competitive risk and this difference appeared to be influenced by individual experience and organizational position. Managers in consumer and downstream businesses appeared to be more concerned about competitive risk than those dealing with business customers or having upstream operations.

5.2.3 Customer Risk

"In terms of household classification… India was a pyramid which is becoming a diamond."
MD & CEO of a $400M publicly held Indian fashion retail company

Customer risk involves challenges arising out of changing habits and preferences of the customer, as well as changing market characteristics. Most interviewees referred to such changes and its impact on their business, both in the short-term as well as in the long-term. A recurrent theme amongst managers was the impact of changing customer behaviour on their existing business model.

"The one underlying risk that is always at the back of our mind is the relevance of the brand to the emerging consumer… there's a whole shift to the way they dress, the way they think, the way they move. Are our brand's relevant for them or do they view us as their daddy's brands? In which case it's doomsday for us"
CFO of a $2B Indian conglomerate in foods, fashion & retail

"We work on a very important philosophy: 'it's natural'- no chemicals, no preservatives. The challenge is that the moment it is put in a packet it is considered unhealthy.
That's the challenges I face on a daily basis..
to convince the customer that I'm a packaged food and I'm healthy."
Founder & CEO of a fresh-foods start-up

Almost all interviewees from Indian consumer-products companies called out their brand as one of the primary areas of risk. They expressed concern regarding the relevance of their value proposition given the changing customer persistence and loyalty in the new milieu. This was in contrast to their counterparts from MNC companies and those in the business-end of the market.

5.2.4 Operational Risk

"Services companies are about take the best processes, invest your IQ in developing high quality processes and then get people to scale those processes.
Companies that can do this effectively have significant edge, and those that can't……"
Global COO of a $200M legal processing outfit

Operational risks revolve around the challenges faced by the organizational execution engine, its processes and systems and its supply chain in dealing with the developments in the market and the changing market dynamics.

"Our business involves investment returns, customer retention and mortality. The first is uncertain, the third an act of God. No persistency (lack of renewals) is a big risk. And we need to bring down costs of renewal."
MD & CEO of a $200M privately held Indian insurance company

"The retail business has many moving parts.
So, there is a higher chance of something going wrong."
CEO of a $100M Indian departmental/ speciality retail chain

The interviewees considered operational risks not just in terms of dealing with the current changes in the market place, but also the effect of such changes on their growth plans and ability to service the markets in the future. Consequently, most of the operational risks mentioned revolved around supply chain, processes and systems and the efficiency of their business model in this dynamic business environment.

Almost all managers showed a marked focus on the operations of the business. However, it was observed that managers from consumer-focused businesses were more concerned about the relevance and longevity of their current operations while those from business-focused markets appeared more concerned on the efficiency of their operations. Similarly, managers from Indian companies appeared to be more concerned about operational risk compared to their MNC counterparts. The criticality of operational risk also appeared to be influenced by the position, function and tenure of the respondent.

5.2.5 Employee Risk

"This is a creative industry. The fashion element and the risk associated with creation is highly individual, skill oriented & competitive, you cannot mass produce it, or get it on a computer... Our skills and competency reside on two legs, and can walk out of the door."
CFO of a $2B Indian conglomerate in foods, fashion & retail

Employee risk involves finding and retaining talent, ensuring their productivity, keeping them motivated and providing the environment and the leadership to engage them and help them succeed.

"When it comes to talent, it's a big challenge in our industry. It takes time for people to understand our products, our customers, our businesses.. that's the risk. Even if you bring in bright talents, it takes them time to learn, it takes them time to execute.
In a fast changing world, people have aspirations, want experiences.. the conventional jobs on shop floors are considered demanding, they move. Definitely we have struggles.. people are not like you and me 26 years with the company.. people don't create a career in one company ..it's a bigger risk in senior levels."
MD (India) of a $2B MNC supplying materials for multiple industries

Notably, all interviewees mentioned talent risk as one of the primary concerns. However, some of the interviewees talked about specialized talent or senior talent, some had challenges in finding talent, others had concerns about retaining them or training them. The issue of keeping them engaged and also managing their aspirations and expectations was also expressed as a major risk. All managers considered employee risk as critical, though their expression of the risk itself varied. Managerial perspectives on employee risk appears to be influenced by multiple factors at the individual (their background and function), organizational (operations) and industry levels.

5.2.6 Technological Risk

"Technology as a risk manifests itself when we have not planned adequately for technology potential in our business.. others would have gone ahead with it and we will be late. The other piece of risk is around the quick change caused by technology. Do we understand technology? What does it entail? What transformation it is likely to cause to us?"
CHRO of $2B Indian conglomerate in foods, fashion & retail

"Digital disruption is happening in every aspect of the business. One is the conversation with the consumer has changed for any marketing or brand company. Whether its digital procurement or digital retail, it disturbs your regular supply chain and distribution mechanism. It is one of the fastest changing things."
MD & CEO (India) of a $4B MNC processed foods company

Technological risks arise due to the discovery and development of newer technologies and the possibilities associated with it. The interviewees mentioned different aspects of technology risks. At its simplest form it reflects in terms of usage of traditional technological tools in the business system spanning functions (like supply-chain, channel management, procurement etc.). However, there appeared to be higher managerial focus in terms of the usage of digital tools, e-commerce, social media and analytics et al.

"We'd been developing technology products for a long time, cycle time would be say 2 yrs. And then started finding that the business which pushed for it, had forgotten about it, and now there is no owner …we have are left holding a poorly spec-ed output which no one wants. That is the risk of technology development."
Global COO of a $200M legal processing outfit

Though some of the interviewees mentioned about the technologies used in their offerings (performance materials, neural networks) and the consequent risks, mostly the discussions around technological risk revolved around the implications of the technology.

"We have become dinosaurs in terms of technology, the impact of technology on our lives. We have people in the system who understand, who are able to have an intelligent point of view on technology and the impact of that on our business. But it's no longer a coffee table kind of talk. It's real, it's hitting us every day. And we need to be able to put our arms around it."
CFO of a $2B Indian conglomerate in foods, fashion & retail

The technology itself does not appear to be the cause of the risk as much as its application and the effect of its application on the business, along with the underlying concerns around organizational familiarity and comfort towards integration and adoption of that technology.

The interviewees saw technological risks covering the entire value network of the business, starting with its implications on the business operations to the impact of technology on the life-style of customers and thereby in the marketplace. Managerial impressions on technological risk showed a wide range of perspectives which allows us an opportunity to analyse it further. We discuss this in a subsequent section.

5.2.7 Organizational Risk

"Am I as an organization able to respond to changes in the market?"
CEO of a $2B Indian conglomerate in foods, fashion & retail

Organizational risks arise from challenges inherent to the interactions between the organization and its stakeholders, starting with its customers, its partners and including its employees and includes the risks which emanate due to the changes in context of the stakeholders.

"We have to change first to understand that we have to be nimble, agile and what worked in terms of process and systems will not work in the future. To shed something that's worked well & produced results for you repeatedly and successfully. To completely discard that and get into something new, which is unknown, and which you have not able to put your arms around because it's evolving and changing so fast. That calls for a big change in the mindset of our managers and ourselves. That is the organizational risk."
MD of a $1B Indian consumer goods company

The interviewees referred to aspects of organizational risks including organizational culture, change management, agility, decision making et. al. The underlying theme across all the discussions on organizational risks revolved around the ability of the management to respond to and deal with the changes arising in the market-place. We observed that managers in functional roles appear to have a more nuanced perspective of organizational risk than the executives leading the organizations. Similarly, those in Indian companies

appeared to be more engaged with organizational culture compared to their counterparts in MNCs.

5.3 Unique Characteristics of Business Risk

Based on the field interviews, we elicited certain characteristics of business risk. Of these characteristics, some have already been discussed in extant literature (as well as briefly covered in the review earlier). However, some of our observations are distinct and unique and provide significant contribution to the current understanding of business risk.

We discussed our interpretations with three experts (two academicians and a senior executive). The experts expressed concurrence with our interpretations but suggested certain modifications, which were carried out. Next, we share four novel insights on managerial perspectives to business risk, as emerging from our research.

5.3.1 The Nature of Managerial Risk Perceptions.

"Risk changes over time.
Earlier we were struggling with issues of FDI[10]. Today it is e-commerce"
CEO of a $100M Indian departmental/ speciality retail chain

From the field interviews, we gather that managerial perceptions of risks tend to change over time.

[10] Foreign Direct Investment. An investment in the form of a controlling ownership in a business in one country by an entity based in another country.

"My attention has shifted with time. When I took over, I was focused on operational challenges and coming to grips with the regulatory framework. Then we focused on the business challenges (what customers, what products). Last year we finalized our strategy to deal with it. Now I'm focusing on building the business. Each of these took 60-70% of my time over the past 4 years. The remaining 30-40% goes on the people side."
MD of a $1B Indian consumer goods company

These changes appear to be effected not just by external events but also by the individual or organizations' own experiences. However, managers appear to have differing views on the temporal nature of business risks and these views too appear to be influenced both by the external (environment) as well as internal (company position, individual experiences) factors.

"For a start-up, the most important function is sales. But I think when you mature, you ensure that all 7-8 functions of the organization get due importance.
If you'd asked me a year ago about my confidence of building a $250M brand it would be ~50%. Today it is 90%. This is because I started building a team.
And then the team started performing. Your confidence goes up!"
Founder & CEO of a fresh-foods start-up

From the field interviews, we also noticed significant differences in the risk focus of managers. Whereas some managers were primarily focused on environmental factors, most others appeared mostly involved around those risks which were within their gamut of influence and control. Even within these, most managers appeared to have a greater focus on the external aspects of risk affecting the business whereas few appeared to be more engaged with risk factors internal to the organization.

Our research suggests that there is a broad division in terms of managerial focus between the seven facets of business risk. It appears that managerial prioritization between the risks depends upon individual, organizational and industry-level considerations, which in turn also affect their interpretations of these risks.

5.3.2 Interconnectedness of Business Risk Facets

"More and more, consumers are seeking instant gratification. And they want more and more of you. That means our whole back end system including our HR systems, or financial systems, supply chain processes or control systems, and environment which we work in… everything is at risk."
CEO of a $2B Indian conglomerate in foods, fashion & retail

We noticed that managers don't look at specific risks in isolation. Their perceptions of risk cuts across multiple risk facets and even though they analyze the causes, they are more focused on addressing the effect in totality. We thus observe the co-existence of different risk facets in managerial considerations of business risk. We call this as the **interconnected nature of business risk**, and illustrate it through some quotes from our field research:

"e-commerce, online, social media, analytics.. ways in which you can interact digitally, all of which can take you to a better place.
But the back end of the supply chain is more difficult in terms of how they respond and how they adapt to these opportunities, else it all comes a cropper."
MD (India) of a $2B MNC supplying materials for multiple industries

"The biggest challenge is not the technology or the changing customer, but the resultant technology-customer interface and what it means for our business"
CEO of a $2B Indian conglomerate in foods, fashion & retail

We also noticed that specific themes repeated more frequently than others, and the one common link across all the seven facets of risk was the people factor, or the occurrence of the risk in the context of the people involved and the influence of the people on the risk itself.

"The work that we do, despite all the technology in the world is still people intensive. And there is no easy way to remove that people element, because that is just part of what we do."
Global COO of a $200M legal processing outfit

In fact, the people factor appears to manifest itself across the entire spectrum of an organization's activities. At one end the firm deals with its customers and at the other its internal employees. On one end is the challenge of being connected with customers, now as well as in the future. On the other end is the challenge

of hiring and retaining the right employees as well as managing the talent pool to meet the requirements of the market over time.

"Depending on the situation the customer keeps changing. There needs to be recognition that they are equal partners in the game. The way we do things, the whole ecosystem and us, we are to speak the same language."
MD of a $1B Indian consumer goods company

Between these two ends of customers and employees is the entire value network of a connected ecosystem including suppliers, partners and distributors. Outside the ecosystem but equally critical is the presence of the influencers, the invigilators and the legislature. In essence each of these entities consist of groups of people, and there are risks associated with the ways and means by which the organization is engaging with them. Aggravating the risk is that each of these entities are susceptible to change and do change. These changes may occur within these people independent of the organization's interactions with them, but with implications on the same interactions. The changes could be in terms of aspirations, behaviour, cultures, expectations or any other aspect but tend to have an impact on the interactions.

The organization has to deal with the dynamic context of people across all the human players in the different nodes of its extended network. As there are interactions there is the possibility of risk. We call this as **people risk**, and offer a formal definition as follows. We define *people risk* as *the possibility of an adverse or deviant business outcome arising from either the firm's engagement with people across its extended network and through the changes in these people independent of the interactions but with implications to the firm.*

We would like to clarify that people risk is not the eighth facet in our enumeration of business risk. Instead, it is the risk which runs along with and across each of the seven facets of business risk. In order to further illustrate the interconnectedness of business risk, we review the context of people risk in greater detail under the section Management of Business Risk.

5.3.3 Multidimensionality of Business Risk Facets

We noticed significant differences in the way managers looked at specific risks. Differences in perception were observed across the form (how it is expected to occur), space (where it is expected to occur), time-frame (when it is expected to occur) and force (of likely impact).

"There's promise: e-Health, digital, chip-in-pill, Google collaboration. Nothing dramatic as of now."
Chairman & CEO (India) of a $12B pharma MNC

"Digital and e-commerce are clear risks."
CEO of a $100M Indian departmental/ speciality retail chain

"Technology allows us to engage with customers (social media), listen to them (reputation management), sell to them (e-commerce), automate ourselves (MIS/HR/Purchase) and be smarter in how we do things (analytics). Technology is an opportunity, not a threat."
MD of a $1B Indian consumer goods company

"The way we protect ourselves is through technology."
Global COO of a $200M legal processing outfit

"We are driven by technology! Maybe it comes from my IT background."
Founder & CEO of a fresh-foods start-up

These variances, though present for most facets of risk, were markedly most pronounced for technological risk. The above quotes from our interviewees on technological risk covers the entire spectrum from technology as non-functional, technology as a threat to technology as an opportunity, technology as a protector and finally to technology as the driver of business!

It is a graphic illustration of how managers perceive business risks in general, and particularly technological risk. More importantly, it illustrates the presence of multiple shades and contexts to a particular facet of risk. We call this the **multidimensional characteristic of business risk**.

We observe that managerial perceptions of risk – in terms of its type, occurrence and incidence – is significantly influenced by industry, organizational and even individual factors. It also appears that managerial perceptions of business risk are affected by their past experience and familiarity in dealing with it. Further, this difference in managerial perception also appears to effect their efforts to manage the risk. Our research also suggests a greater variance in managerial perceptions of technological risk compared with the variance observed in other facets of risk. We review the implications of multidimensionality of business risk - in the context of technological risk - in greater detail under the section on Management of Business Risk.

5.3.4 Managerial Perceptions of Business Risk

Managers refer to particular kinds of risks and even within the particular kind, there appears to be significant divergence in their outlook in terms of the form, space, time-frame and force of the risk, and thereby its implications. This difference in managerial risk perceptions, influenced by multiple factors from the environmental, organizational and individual standpoint has been well-studied (discussed briefly in our literature review) and our study further establishes that view. We also observe additional antecedents of business risk.

From our research it appears that managerial perception of risk is not a dichotomous or linear construct as suggested in extant literature. Our research tends to suggest that based on the context, managers limit their attention to certain risk forms (select), consider the criticality of these risks in some meaningful way (organize) and then attach meaning to it (interpret). These actions together constitute their perception of business risk (Figure II).

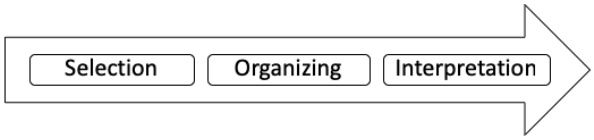


Figure II: Managerial Perceptions of Business Risk

Our view of managerial perception is consistent with the definition of perception as accepted in social sciences. *"Perception can be defined as selection, organization and interpretation of marketing and environmental stimulus in a coherent picture"* (Assael, 1995, p. 205).

Since we interviewed senior executives having an organizational view, we see the emergence of such an intricate interpretation of our construct of business risk, cutting across episodes, players and functions. This narrative, though complex in nature, is a more appropriate representation of business risk as perceived and addressed by managers and in addressing the cause of the risk itself.

5.3.5 The Multidimensional Picture of Business Risk

The view of business risk that emerges from the field interviews is that of a complex, non-linear, interconnected, multidimensional construct; appearing as

a consequence of myriad factors; somewhat amenable to interventions and having diverse outcome possibilities. Consistent with the findings from our field research we view business risk in this interconnected and multidimensional form.

We identified the seven facets of risk, each having multiple dimensions and interconnected in form. We notice the common link of people across all these facets, which calls out for particular attention. Our research suggests that based on the context, managers select, organize and interpret the risk and these actions together constitute their perception of business risk, and effect their actions to address it. Figure III attempts a visual representation of this outlook.

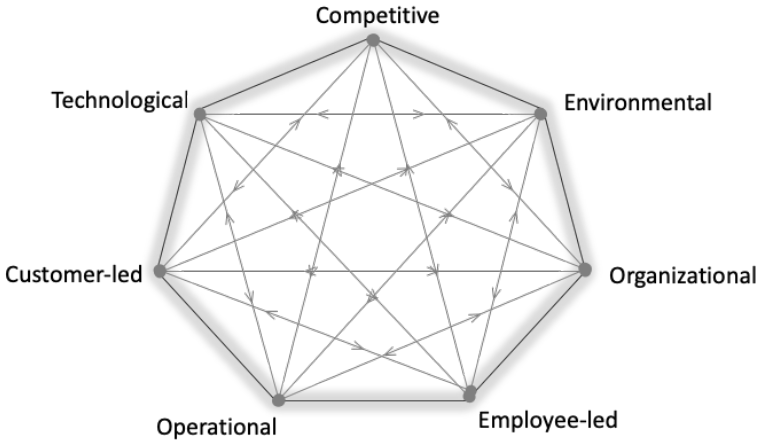


Figure III: The Seven Facets of Business Risk

The variance in managerial risk outlook reaffirms the contingent nature of risk perceptions (extensively covered in risk literature, and briefly discussed earlier). The dimensionalizing of risk facets provides us an opportunity to investigate these variances beyond behavioural factors.

Our research also suggests that some managers seem more connected with particular facets of risk. Whereas we saw this explicitly in the case of environmental risk, it was also noticed in the case of certain other forms of risk. Particularly, managers in consumer-focused businesses appeared more involved with customer-led and competitive risks. On the other hand, we also noticed a greater focus on operational risk by those holding functional roles and by those in services sector.

From our research we gather that managerial perception of business risk appears to be influenced by certain individual - experience, position and function; organizational - its origin (Indian or MNC), age (start-up or established), its customer base (business or consumer, B2B or B2C), its operations (upstream or downstream) – and industry (sector, competition) level factors along with the overall environment. Some of these factors have not been considered in earlier efforts to identify the antecedents of managerial risk perceptions and guide our efforts during the next stage of research. Additionally, the multidimensional treatment of business risk and the stages to perception together provide an opportunity to better understand managerial perceptions towards business risk.

5.4 Management of Business Risk

Managers don't avoid risks or take risks but instead manage risks and may also seek to leverage it. We avoided direct inquiries about particular managerial actions for risk mitigation and instead probed on "what is required to manage these risks". Our approach helped address respondent bias, since it was seen as

non-evaluation of managerial actions but instead seeking their considered views on risk management.

"Risk and capability go in together."
MD & CEO (India) of a $4B MNC processed foods company

"If I have to manage that risk, I need to mitigate it and the only way to mitigate it is to build the capabilities to mitigate it. When I am saying capabilities, it is the way the organization is dealing with the risk"
CHRO of $2B Indian conglomerate in foods, fashion & retail

Our research suggests that managers see organizational capabilities as the antidote to business risk. The organization faces greater risk when it is markedly deficient in terms of capabilities to manage that risk. Alternatively, greater the extent of firm capabilities lesser will be the effect of that risk. Enhanced capabilities allow the organization to leverage risk for business advantage. In order to manage risks, the firm might need a bouquet of capabilities (Figure IV).

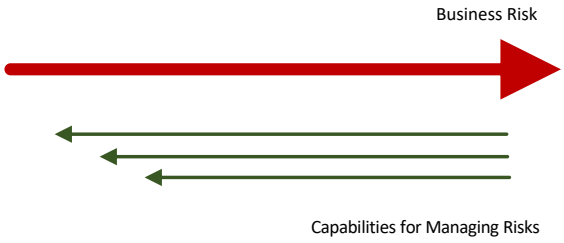


Figure IV: Capabilities to Manage Risks

Within the capabilities themselves, some might be present and best-of-breed, some might be present but need enhancement and others might be absent. Managers need to not just identify the capabilities required but also take action to ensure availability of such capabilities. Management of business risk thus involves identifying the capabilities required to manage the risks and then ensuring availability of those capabilities, including steps taken to protect, enhance, develop or acquire such capabilities as might be required.

Our research suggests that managers differ in terms of their risk management approach and these differences occur both in terms of the capabilities they identify as essential for managing the risk, as well how they go about building those capabilities.

5.5 Capabilities for Managing Business Risk

"The health impact of food is happening in many countries. Since we are a global organization, we have that experience.. It will be difficult for a local Indian player and they may not have that capability."
MD & CEO (India) of a $4B MNC processed foods company

"Services is all about processes and doing it effectively, efficiently."
Global COO of a $200M legal processing outfit

The interviewees referred to an extensive range of capabilities that they considered essential in managing business risks. The specific articulation of such capabilities varied significantly and covered an extensive breadth of organizational competencies.

"The company had a tradition of taking international brands to market. Localizing is not simple, it's a combination of consumer insight and design capability. Once you have scale then you start developing channel capability (in terms of negotiation powers with channels and real estate). These are totally different capabilities – design and real estate.. one is in the office and other is outside the office."
MD & CEO of a $400M publicly held Indian fashion retail company

The interviewees mentioned capabilities to manage risks from a functional (marketing, supply chain), operational (quality, processes, metrics), organizational (culture, leadership, employees) as well as domain (customer, partner and technology/ digital) perspective.

"Our risks have not changed. What's changed is the scale of 'good' & 'bad'. What was good is no longer good."
CEO of a $2B Indian conglomerate in foods, fashion & retail

Several managers noted that the dynamic environment of today calls for evolving capabilities which need continuous development and enhancement.

In order to maintain the common structure essential towards driving comprehension we build upon our understanding of the interconnectedness and multidimensional nature of business risk and its management with deeper focus on people risk and technological risk and the capabilities to manage them. From the field interviews, we identified specific capabilities that firms need to deal with such risks and explored the strategies adopted by managers to ensure availability of the capabilities.

5.5.1 Capabilities for Managing People Risk

Given the recurring theme of "people' across multiple risk facets, we reviewed the interview transcripts and notes to explicate capabilities essential to enable the organizational interaction (current as well as future) with people across its extended network. Table VI provides a representative list of the different capabilities mentioned by the interviewees which we found relevant to the context of people, organized by the ten groups that we found distinct and relevant.

The entire value network of business - right from raw material supplier to channel partner to customer and including its internal employees and external stakeholders - is essentially made out of people. These capabilities have been determined empirically but map into the organizational level thinking of senior

managers and as such we see the emergence of constructs cutting across the different groups of employees, vendors, customers and stakeholders. Our list of people capabilities takes a holistic view of people challenges and focus on those capabilities which have relevance across businesses.

Table VI: Capabilities for Managing People Risks

Customer Centricity	Transformational Leadership
Consumer understanding (minds/ wants/ expectations)	*Change management*
Engage/ listen	*Dealing with change*
Equipped to deal with changing customers	*Stickiness for/ of leadership*
Direct connect to consumers	*Tall leaders "ability to inspire/ motivate people (in difficult times)"*
"Customer centricity across the people value chain"	
Ability to connect directly to consumers (listen/ discuss/ tap/engage)	Market Understanding
	Market understanding
Organizational Culture	*Real-time sensing & interpreting market*
Cultural shift	*Ability to identify emerging opportunities*
Dealing with change	*Market sensing (real-time sense making): anticipate & be ready*
Empowerment	
	Decision Making
Collaboration & Partnerships	*Faster decision-making (nimble and agile)*
Management of vendors	*Faster decision making (agility)*
"Customer centricity across the people value chain"	*Decision-making amidst ambiguity*
Talent Management	Employee Engagement
Talent management	*Employee engagement*
Right people	*People management through processes and practices*
Attracting high performance employees	*Finding people with a common philosophy*
	Commitment & motivation
Risk Taking	
Culture of experimentation	Training & Development
Willingness to take (calculated/ calibrated) risks	*Change management*
Balancing intuition and experience	*Training & Development (Dealing with Change)*
Coding Legend and Meaning	
First-order categories	*Representative quotes - specific capbailities or manifestation of risks*
Second-order categories	Capability

We next briefly describe each of these capabilities along with a representative impression from the field interviews.

5.5.1.1 Talent Management:

"It's a fairly strong organizational belief to grow talent from within. That is our way of creating, because frankly, there is no ready talent, like you can plug in and put it here because

the guy who knows how to grow a great mango doesn't necessarily know how to get it across to a shelf fit for the consumer at a good price… this is what we put together. Building talent pool from within, it means lots of job rotation, lots of transfers across functions, lots and lots of effort.

CEO of a $500M Indian food & grocery retail chain

Hiring, retaining and managing the right talent to meet the organizations current as well as future needs.

5.5.1.2 Employee Engagement

"Being able to feel valued in a company is extremely important. Beyond money, beyond career, do I have a reasonable say in shaping the destiny of the organization, in whatever form it is? That is a big high. I think being able to create your own pot out of clay is a big high"

CHRO of $2B Indian conglomerate in foods, fashion & retail

Hiring, aligning (with organization goals), managing expectations, enhancing productivity and developing skills & capabilities of the right set of employees for the organizations current and future needs.

5.5.1.3 Organization Culture

"It's your culture, the ability to retain and create people who will be able to take challenges as distinct from the managers who manage the business. Sure, you will have times when lot of people are not ready or at the second level, some top people are, but that's a situation in any business. I don't see the later as a great challenge, but the former.. yeah!

MD & CEO of a $200M privately held Indian insurance company

Building and maintaining organizational set-up & environment (experiences, philosophy & values) to guide employee behaviour to deal with business challenges.

5.5.1.4 Transformational Leadership

"We need tall leaders. There are outstanding managers but are they tall leaders? Do I inspire people around me. When things don't go your way do you threaten, do you cajole, or do you say.. 'hang on, it's the moment to inspire people'? And to me that's an outstanding capability. The more you inspire in difficult times it further accentuates the inspirational quotient."

CHRO of $2B Indian conglomerate in foods, fashion & retail

Senior management inspiring and leading engaged teams to navigate the organization through uncertainty and change.

5.5.1.5 Customer Centricity

"There is this big capability called customer centricity. It is a common theme that runs across our businesses. Is the customer at the centre of the decisions you make? It is only relevant for the external customers? Is it also relevant for your internal customers? There is this theory which says that unless the internal customers are happy you won't be able to transfer that happiness to the external customers. It is good to have that at the back of your mind. Ensuring that we follow customer centricity in all its principles...

CEO of a $2B Indian conglomerate in foods, fashion & retail

Systematic listening, engaging & understanding of customers minds while also keeping her at the center of organizational actions and focus.

5.5.1.6 Market Understanding

"Our effectiveness to respond to market changes. Given the consumer, the technology, given both these pieces, is there a better way to respond to market changes at an organizational level? Capability is the ability to experiment and see the shifts. How do we build an organization that senses these changes?"

CEO of a $2B Indian conglomerate in foods, fashion & retail

Real-time sensing and sense-making (interpretation) of market changes as well as having the ability to anticipate and be ready for likely future changes.

5.5.1.7 Decision Making

"The way we manage things. Traditional way of managing things is put a structure, give people responsibilities. But increasingly a lot of that needs to be looked at, today more and more people are working in project teams.. that is structure, process, people coming together."

MD (India) of a $1B MNC industrial manufacturer

Actively navigating and steering the organization amidst uncertainty through systematic agility and faster responses.

5.5.1.8 Risk Taking

"Basically, function of trust, connect with the market place, internal conviction with what we are doing, the whole enabling process which is really about empowering the decisions and people.
We have systems but there is always a question of how well those systems working."
CFO of a $2B Indian conglomerate in foods, fashion & retail

Displaying both ability and willingness to take calibrated risks (with right evaluation mechanisms) and driving a culture of experimentation and innovation.

5.5.1.9 Collaboration & Partnership

"The culture of dealing with your vendors and your external ecosystem. Is it transactional, is it relationship driven, short term, long-term? How ingrained is the external ecosystem in your own culture?"
MD (India) of a $2B MNC supplying materials for multiple industries

Investing in building, developing and maintaining strategic relationships beyond the growing network of suppliers, manufacturers, vendors & channels and towards an expanding influence over the wider ecosystem.

5.5.1.10 Training & Development

"Most of the talent we hire at entry stages fresh.. agriculture graduates in fruits & vegetables space, or in rice & wheat space, and similarly for other dimensions of business. We are growing them from within. It requires disproportionate T&D intervention, requires a very strong teaching DNA to do it, where we are constantly teaching each other, learning from each other..." Similarly, a lot of people are from store operations, they've seen consumers and know what they expect…then with our investments, we help them to acquire the technical expertise required to be able to handle fruits & vegetables."
CEO of a $500M Indian food & grocery retail chain

Developing, training and motivating employees to deal with and emerge stronger amidst uncertainty and change.

The impressions collected during the field interviews suggest that there are multiple aspects to the construct of people risk (as reflected from the range of

capabilities required to manage it). However, during the interviews most managers expressed concerns only on particular aspects. Whereas issues like talent management (and even training & development) were voiced frequently, others like organizational culture were mentioned sparingly. Managers also appeared to have differing focus even within the behavioural aspects like customer centricity and risk taking.

From the field research it appears that managers differ in their prioritization and interpretation of the different aspects of people risk. Similar to the overall facets of business risk, it could be expected that managerial perceptions of people risk are directed towards certain aspects and these aspects are influenced by situational factors. Whereas we noticed a difference between the attention given to employee-led aspects compared to the behavioural aspects, we could not identify any specific pattern in those differences based on organizational or industry-level characteristics. On the contrary (and unlike what we observed for the overall facets of business risk), it appears that more experienced managers tend to have a narrower view of the different aspects of people risk. However, it does appear that managerial prioritization and their interpretations of people risk affect their actions towards risk management.

5.5.2 Capabilities for Managing Technological Risk

Technology capabilities are integral for business survival today and usage of basic digital tools is germane to most business processes and across organizations. Technology capabilities can also drive non-linear change due to substitution of process, business model or even markets. Even though some

level of technological capability is inherent for running any business, the field interviews provided unique insights on how some firms use technology capability as a source of competitive advantage. From the interviews it appears that the difference lies in how the capability is visualized and thereby developed and harnessed over time.

"Technology capability in my view is (1) understanding the technology in the first place. What happens is today you get lost in the various technological terms but what is the real capability of the solution. (2) Rate of absorption of technology in the organization and therefore what kind of changes we need to make in the organization to adapt to that technology. (3) Ensure that the complete capacity of that initiative has been utilized fully. How to hasten that pace of technology absorption in the company is again a big thing that we need to do. But I think the broad point is to demystify technology."

CHRO of $2B Indian conglomerate in foods, fashion & retail

The field interviews also suggested that the need for technological capability spans across business functions. The greater challenge appears in understanding key stake-holders (customers, channels, vendors, partners et al) and their aspirations in the digital context and then harnessing the powers of digital technologies across the network to create value for all stake-holders. Many of the interviewees alluded to the importance of an integrated and senior managerial perspective to scope out the gamut of technological capabilities.

The field interviews provided a detailed outlook of organizational responses to technological risk including strategies adopted by them in acquiring the capabilities to manage these risks. We reviewed the interview transcripts and notes to explicate the key capabilities essential for organizations to not just manage the challenge of technological risk but also harness the consequent possibilities emerging from technological changes and newer technologies. Table VII provides a representative list of the different capabilities mentioned by the interviewees which we found relevant, organized by the 5 groups that we

found distinct and relevant. We next enumerate each of these capabilities through a brief description.

Table VII: Capabilities for Managing Technological Risks

Information Technology & Systems	Digital Capability
IT Capability	*Digital/ online/ internet based capabilities*
Data Security	*Ability to connect directly to consumers (listen/ discuss/ tap/engage)*
Privacy	*Direct reach through e-Commerce*
	Dealing with convergence (consumer, market, supply-chain, technology)
Technology Enablement	
"Technology beyond controls as an enabler of speediness & seamlessness"	**Insights**
Blending technology capability and domain expertise to provide solutions	*Capturing of meaningful data*
Ability to absorb (understand & interpret) technological change	*Intelligent use of data (Analytics)*
Understanding technology solutions	*Getting insight from electronic data*
Technological back-bone as core to the business	*Ability to handle increasing data*
Data-driven market planning	*Using data effectively and efficiently*
	Draw conclusions from patterns/ trends
Technology Integration	*Market modeling & forecasting*
Dealing with convergence (consumer, market, supply-chain, technology)	
Using technology for dynamic product development	
Using technology to attract/ secure new customers	
Using technology to service customers	
Coding Legend and Meaning	
First-order categories	*Representative quotes - specific capbailities or manifestation of risks*
Second-order categories	**Capability**

5.5.2.1 Digital Capability

"We need to understand digital & e-commerce better, and what it takes to play here"
CEO of a $100M Indian departmental/ speciality retail chain

The skills and competencies required for enabling & working in an internet-enabled and inter-connected world, heavily reliant on digital technologies.

5.5.2.2 Insights

"I think we are getting better at creating meaningful insights out of data and trying to do multiple things to improve based on that.
I also think it's about framing the right questions, framing questions in a way that can give actionable things to do.
The organization is going through this process of becoming more & more data driven, using analytics to figure out pictures and patterns.. and hopefully becoming better at it."
CEO of a $500M Indian food & grocery retail chain

Generating, capturing and interpreting right & growing amounts of data for relevant and useful insights to aid and improve business decision-making.

5.5.2.3 Technology Enablement

"We have a very sophisticated IT infrastructure - spread across 5 areas - which we have put together over the last few years. (1) We developed a mobile app for our salesman to geo-tag every store and capture store-wise sales & return on a day-to-day basis, thereby tracking store productivity & wastages; (2) We had excel-based accounting solution before I went to SAP and said that we wanted to implement their system. They laughed at it, since we were then Rs. 200M business. I put my money on it and got it done spending Rs. 3-4 million; (3) We have an ERP solution integrated with our sales-automation solution tool; (4) A year ago, we put our data analytics platform in place. We have 4 years of data and today decisions are made based on history; (5) And the most importantly, we are now a 1000-member operation. So we implemented an HR information system. These 5 IT solutions play a very important role in our business."

Founder & CEO of a fresh-foods start-up

Using and driving technology enabled business systems across the different nodes of the value network, thereby building a technology backbone as the core to the business.

5.5.2.4 Technology Integration

"The biggest challenge is not the technology or the changing customer, but the resultant technology-customer interface and what it means for our business"

CEO of a $2B Indian conglomerate in foods, fashion & retail

Actively adopting, integrating, understanding & accepting advanced technological capabilities and blending them with traditional skills, experience & expertise to gain better results.

5.5.2.5 Information Technology & Systems

"We need IT capability, hardware capability.
Not very different from what any organization needs."

CEO of a $500M Indian food & grocery retail chain

Effectively managing and controlling all information technology tools including infrastructure, systems, security & privacy.

During the interviews, we noticed a wide variance in managerial focus and choice of capabilities for dealing with technological risk, confirming our contention of its multidimensional nature. Particularly, managers in consumer industries and those in market-facing roles appeared to be primarily focused on digital capabilities and insights. On the other hand, we found managers from services and technology industries and those in functional roles having equal focus on aspects of technology integration and management. It would appear that individual, organizational or industry-level characteristics significantly influence managerial prioritization and interpretations of the dimensions of technological risk, which in turn affect their actions towards its management.

5.6 Developing Capabilities for Risk Management

"It's profound and difficult to bring in new capabilities. Much easier to bring in new equipment."
CEO of a $2B Indian conglomerate in foods, fashion & retail

Managers consider developing capabilities for risk management as extremely challenging but view it as an essential part of their role. The field interviews suggest that executives can take completely divergent approaches towards acquiring, developing and investing in required capabilities for management of business risk. We observed that the variance in managerial responses extends to their approach, both in sourcing the capabilities which they identify as well

as in their choice of the means through which such capabilities are acquired and enhanced.

"We can learn from so many case studies."
MD & CEO (India) of a $4B MNC processed foods company

"I have external consultants who allow us to hit the ground running."
CEO of a $100M Indian departmental/ speciality retail chain

"We are actively trying to buy talent"
MD of a $1B Indian consumer goods company

"*We partner with global players*"
MD & CEO of a $400M publicly held Indian fashion retail company

"So we bought three small companies and we are now knitting it together to produce one global digital solution."
MD (India) of a $2B MNC supplying materials for multiple industries

Managers identify existing organizational capabilities or invest in newer capabilities to enable management of such risks, and tend to use multiple options to either develop, nurture or acquire these capabilities, including self-learning, training & development, hiring of domain experts, engaging consultants, partnering or out-sourcing to agencies or even seeding and investing in the start-up ecosystem including considering outright acquisitions and buy-outs. The different approaches to acquiring and developing capabilities as captured during the field interviews are detailed in Table VIII.

Table VIII: Routes to Capability Development

Internal	External	Build or Create
Develop right organizational culture	Use consultants	
Learning & development	Buy or acquire talent	Talent
Embracing change	Partner	Expertise
Fusion of existing with new	Acquire	

Managers take different approaches in their choice of capabilities essential for managing their business risk, and these choices appear to be influenced by their

perceptions of risk as well as the opportunity for leveraging it for business advantage.

"It is very exciting. Digital is democratic, I think it provides an opportunity for us here. We can be faster and more innovative and the lead digital market for the company."
MD & CEO (India) of a $4B MNC processed foods company

"We need to run with it, so we use consultants as crutches. But in our experience the capability has to be embedded into the system for us to be able to gain from it."
MD of a $1B Indian consumer goods company

The executives alluded to the use of organic and inorganic means to either build and develop capabilities in-house or source them either temporarily or through permanent means.

Our research suggests that managerial prioritization and interpretation of specific business risks, coupled with other factors, defines their approach towards developing capabilities to manage business risk.

5.7 Desired Outcomes

None of the interviewees in our field research viewed successful risk management in terms of variance in profit or accounting returns and such measures which are used extensively in risk literature, though many of them hinted that it becomes difficult to define success, given the intangible nature of business risks. Instead, most executives seek to track their progress through standard business parameters.

From our research it appears that managers view success of their risk management efforts not only in terms of the changes in their product range and

service offerings but also the impact their actions have on the organizations overall market presence and customer engagement. The executives also referred to the effect on their supply chain, business model and overall organizational structure & systems as important factors in gauging the success of their efforts. Some interviewees also alluded to the impact of these efforts on their employees. However, given paucity of time and respondent fatigue, we couldn't explore this aspect adequately during the field interviews.

It will be worthwhile to identify such measures and map them with final business outcomes in order to complete the entire linkage between identification, prioritization and management of business risk and the desired outcomes.

5.8 The Control Panel View of Business Risk

The extant approach to the study of business risk tends to focus on the antecedents and predictability of risk taking as well as its financial measurement, which we called as *the black box view of risk taking*, since it helped us develop our diagnostic (ex post) understanding of business risk. Our research instead provides an opportunity to develop a real-time understanding of how managers deal with business risk.

We find that managers have a complex, multidimensional view of business risk which emerges from myriad considerations. Based on the context, they prioritize and interpret the risks and these actions together constitute their

perception of business risk as also influence their actions to address it. Managers select specific capabilities as essential in their efforts to manage these business risks, and tend to differ in their approach towards acquiring and enhancing such capabilities. Our research suggests that from the managerial context, these actions together constitute the management of business risk towards achieving desired outcomes.

We call this representation as the **control panel view of business risk**, given its ex ante view of the subject. Just like the control panel allows the crew of the aircraft to select and control parts of the aircraft during its flight, this real-time view of business risk provides a curative understanding and has the potential to guide managers and researchers alike as they navigate through maze of business risk. Figure V provides a graphic comparison between the view of business risk as prevalent in extant literature and that emerging from our research.

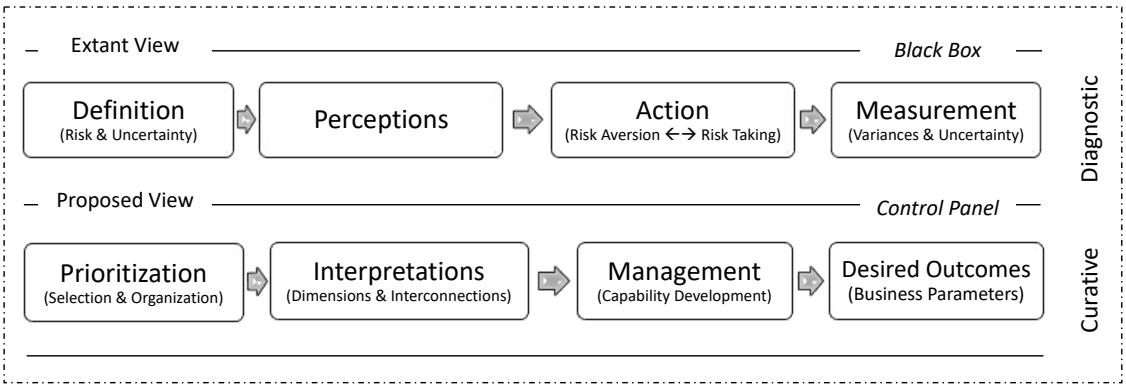


Figure V: A Comparison of the Extant View and Proposed View of Business Risk and its Management

6 Research (Phase II): Field Survey

6.1 Proposed Framework: Management of Business Risk

We are now able to introduce a conceptual framework incorporating the key constructs discussed in this study (Figure VI). Integrating the theory of business risk from prior literature with the insights emerging from our research - with the former serving as a catalyst for deeper examination of the observations from the later - we develop a framework integrating our constructs and their linkages with the extant understanding of business risk. This dialectic interaction between field observations and existing literature helps us to "reconstruct" extant understanding of business risk (Burawoy, 1991).

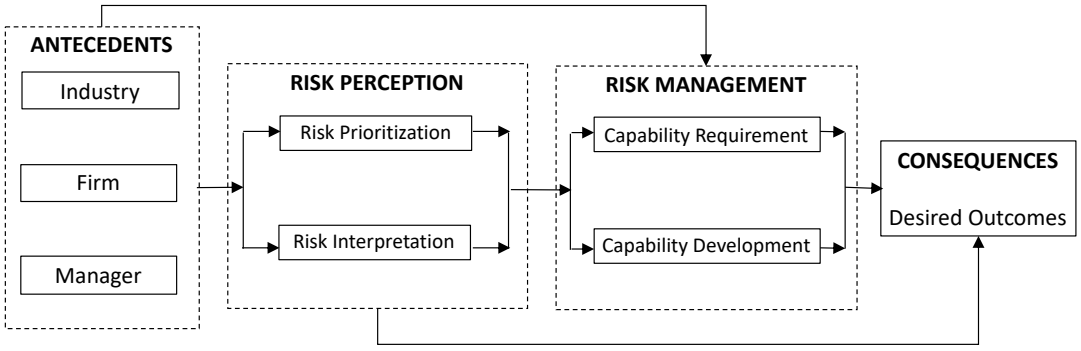


Figure VI: Management of Business Risk

Our framework guides us in the next stage of our research and should also aid future inquiry into the subject. In order to reduce complexity and provide flexibility, we do not attempt to provide a comprehensive list of every construct and instead provide an outline which can be considered for specific facets of business risk and the relevant constructs within the facet. We provide a brief

overview of this framework and then use it to develop propositions around three of its sections.

Consistent with extant literature our research suggests that managerial perceptions of business risk are influenced by different industry-level, organizational and individual characteristics. Based on the context, managers prioritize and interpret the risks and these actions together constitute their perception of business risk. Managerial action towards risk management includes identification of required organizational capabilities and strategies for developing such capabilities. Managers can take different approaches to risk management, and their choices appear to be influenced by their risk perceptions, as well as by their individual, organizational and industry level characteristics. Effective management of business risk leads to desired outcomes.

Our outlook of business risk as having seven facets which are multidimensional in nature and interconnected with each other, provides an opportunity to investigate the differences in managerial risk perceptions beyond behavioural factors, and in the context of particular facets of business risk. Additionally, the staged approach to understanding risk perception allows us to better explain variances in managerial perceptions of business risk.

6.2 Hypotheses for Research

The integrative framework represents the different constructs and their linkages and provides a foundation for further research in the field. For the second stage

of our study we focus on the relationships between the variables affecting business risk interpretation and its management. In the spirit of parsimony, instead of developing exhaustive propositions, we present only select hypotheses which either help validate some of the linkages emerging from our field research or provide added granularity to extant knowledge.

Managerial interpretations of business risk are guided by industry, organizational and individual factors. We earlier summarized a selection of previous studies identifying specific variables and their effect on risk taking (Table II). In this research we focus on those variables which have either not been studied in earlier research efforts, or those where our research provides a more nuanced understanding.

In particular we consider managerial experience in individual variables; customer profile (business or consumer), origin (Indian or MNC), operations (upstream or downstream) in organizational variables and; industry sector (manufacturing, services or technology & new age business), market uncertainty and competitive volatility in industry-level variables. Our research suggests that these variables influence managerial interpretations of business risk.

Our research builds on two particular relationships to establish our model of business risk and explain linkages between individual, organizational and industry-level factors on risk perception. For risk perception, we consider overall risk and its facets, with a focus on people risk and technological risk.

We propose to establish how a multidimensional approach provides a better interpretation of risk in the context of technological risk. Finally, we look at the linkage between risk perception and assessment of risk action.

6.2.1 The Structure of Business Risk

During our field interviews we noticed variance in managerial perceptions across the different facets of business risk, and a general classification appeared to emerge in terms of external risks and internal risks. We also observed that managers generally tend to some treat certain facets of risk similarly and as a group. Particularly, managers in industries with higher legislative oversight appeared preoccupied with environmental risks whereas managers in consumer-oriented industries appeared more engaged with customer-led and competitive risks and managers from services sector and those in functional roles had comparatively more focus on organizational and employee-led risks. We thus believe that the seven facets of business risk as emerging from our field research represent two latent groups of risks (external and internal) with distinct characteristics and these groups will be related differently with particular antecedents (individual, organizational and industry-level factors) of risk perception. Hence:

H_1: An organization faces two different types of business risk, and these two types are related differently with the key antecedents.

For the following hypotheses (H_2, H_3, H_4, H_5 & H_6), though we don't mention it separately, we propose to test the relationships for overall business risk as also the latent risk constructs (if any) emerging from H_1 above.

6.2.2 Individual Characteristics and Risk Interpretation

From our field interviews we noticed that managers frequently relied on their experience while interpreting risk signals. We believe more experience provides managers with greater context from their past, which in turn influences their ability to interpret risk signals. We also observed that managers from the same sector interpreted the same risk at similar levels. Further, the level of risk in a particular business sector is also influenced by the characteristics of that sector. We thus believe that managerial interpretation of business risk is influenced by the sector in which they operate. Hence:

H_{2a}: Greater the managerial experience, greater is the interpretation of business risk.
H_{2b}: The effect of managerial experience on interpretation of business risk is moderated by the particular industry sector.

6.2.3 Organizational Characteristics and Risk Interpretation

During our field interviews it appeared that MNC managers had a wider perspective of business risk than their counterparts from Indian companies. We believe that multi-national organizations, due to their experience in dealing with more varied business contexts, have more refined systems to monitor business challenges. MNC managers have access and exposure to these systems which in turn sensitizes them to a higher level and influences their ability to interpret risk signals compared to their counterparts in Indian companies. Hence:

H_3: MNC managers have greater interpretation of business risk compared to managers in Indian companies.

During our research we observed that managers in companies dealing with end-users (FMCG, retail) showed greater concern regarding the external and market-

facing facets of risk compared to managers from companies who were either suppliers or provided service offerings to other companies (materials, legal services). We believe that companies operating downstream in the value chain - due to their ongoing and real-time engagements with the end-users - have a stronger radar of the market compared to companies operating upstream. These companies thus develop greater perspective to the different facets of risk, which reflects as higher interpretations of business risk. Therefore, a company's position in the industry value chain influences its interpretation of business risk.

Hence:

H_4: Managers in companies operating downstream have greater interpretation of business risk compared to managers in companies operating upstream.

6.2.4 Industry Characteristics and Risk Interpretation

In the course of our fieldwork we noticed that managers from companies operating in fast-changing industries expressed greater concerns regarding multiple facets of business risk compared to managers operating in more stable markets. We similarly observed that managers in companies facing greater and newer forms of competition showed a heightened sensitivity to business risk compared to managers in companies dealing with regular competitive forces. We thus believe that changing dynamics (uncertainty) and nature of competition (competitive intensity) of an industry influences managerial risk interpretation.

Hence:

H_5: Greater the industry uncertainty, greater is the managerial interpretation of business risk.

H_6: Greater the competitive volatility, greater is the managerial interpretations of business risk.

6.2.5 The Structure of People Risk

From our interviews we observed that managers differed in their perceptions of different aspects of people risk and a general classification of people risk began to emerge around employee-led risks and organization-specific risks. Whereas almost all managers mentioned some aspects (talent management), certain other aspects (like risk taking, decision making, organizational culture) found limited mention. We believe that people risk involves latent groups of risk dealing with employee-led and organizational aspects which have distinct characteristics. Particularly, these groups appear to be related differently, or not at all with particular antecedents of risk perception. Hence:

H_7: An organization experiences different types of people risk and these types are related differently with the key antecedents.

For the next hypothesis H_8, though we don't mention it separately, we propose to test the relationships for the different people risk constructs (if any) as emerging from H_7 above.

6.2.6 Managerial Experience and People Risk Interpretation

In the course of our fieldwork we observed that though all managers considered aspects of people risk as critical, there was considerable variance in their focus and assessment of different aspects of people risk. Unlike in the case of overall risk perceptions, managerial assessment of different aspects of people risk did not appear to be based on their experience. In fact, in some cases we found more experienced managers having a narrower view of the challenges they face, and it was mostly pertaining to talent management. It appears that experience

does not sensitize managers to different aspects of people risk and even appears to narrow their context of people risk. Hence:

H_8: Greater the managerial experience, lesser is the interpretation of people risk.

6.2.7 Organizational Characteristics and Technology Risk Dimensions

From our interviews we also observed that managers of B2C organizations were more sensitized to digital challenges as well as the need to sharpen their ability to generate and use data-based insights for business advantage. Consumers today are fast adopters of new technology tools compared to businesses. B2C organizations, due to their exposure to the changes in consumer behaviour on account of digital technologies, develop a higher receptiveness to the implications of technological change. This helps managers in such companies to develop greater perceptivity to different dimensions of technological risk compared to their counterparts in B2B organizations. Hence:

H_{9a}: Managers in B2C companies have greater interpretation of the dimensions of technological risk compared to managers in B2B companies.

During our research we observed that managers in companies operating downstream were more perceptive of the challenges of operating in the fast-changing technological landscape. On the other hand, managers from companies who were either suppliers or provided service offerings to other companies appeared less exposed to certain dimensions of technological risk. We believe that such companies have greater exposure to the changes being brought about by technology, and thus develop a broader perspective to the different dimensions of technological risk, showing higher interpretations of

technological risk. Therefore, a company's position in the industry value chain influences its interpretation of technological risk dimensions. Hence:

H_{9b}: Managers of companies operating downstream have a greater interpretation of the dimensions of technological risk compared to managers in companies operating upstream.

Similarly, we observed MNC managers were more sensitized to the multiple technological possibilities compared to the managers in Indian companies. We believe MNC's due to their global systems have a more proactive approach to the different dimensions of technological risk, leading to their managers developing greater interpretation of dimensions of technological risk. Hence:

$H9_c$: MNC managers will have a greater interpretation of the dimensions of technological risk compared to managers in Indian companies.

6.2.8 Managerial Experience and Assessment of Risk Action

During our research we observed that managerial assessment of their organization's risk management effort appeared to be much higher with more experienced managers. In fact, at times they appeared to be fully in control of the risks. More experienced managers certainly have a better grip of the overall actions taken by the organization in order to address the consequences of business risk. However, it also appears that as managerial experience increases, their belief in the success of organizational change actions get more rooted to established paradigms resulting in an increasing degree of assessment. We believe managerial experience influences their assessment of organizational risk management efforts. However, the extent of the influence appears to be much greater with greater experience. It appears that the influence of experience on managerial assessment varies with the level of experience. Hence:

H_{10a}: More experienced managers have a greater assessment of organizational risk action.
H_{10b}: The effect of managerial experience on assessment of organizational risk action is self-moderated by the managers experience.

6.3 Instrument Development and Refinement

We used existing scales for measuring the individual, firm and industry variables, particularly respondent experience, position and role; firm origin, customer and operations (Bardi, Raghunathan, & Bagchi, 1994; Anand & Ward, 2004); industry sector (FTSE Russel, 2018), market uncertainty and competitive intensity (Atuaheme-Gima & Li, 2002: Clauss, 2016).

Since scales for the other constructs were not available in the literature, in order to operationalize them for measurement we used the earlier described typology for seven facets of business risk, ten capabilities for managing people risk, five capabilities for managing technological risk and six possible strategies for acquiring capabilities. Next sub-texts were developed to explain each of the items appropriately and with clarity.

We measured the perception of business risk through a 2-step process. We measured risk prioritization through an ordinal ranking of the 7 items corresponding to the seven facets of business risk. Risk interpretation of each seven facet was measured by a 3-point scoring format (1 = greatly; 2 = to some extent & 3 = not at all).

We provided definitions for people risk and technological risk to acquaint respondents to the context prior to asking specific questions regarding them. We measured the perception of people risk through a 2-step process, using the items corresponding to the ten capabilities as a measure of the different dimensions of people risk. We measured people risk prioritization through an ordinal ranking of the 10 items, followed by a measure of risk interpretation using a 5-item scoring format to measure organizational stage of development on each of the capabilities (1 = best-of-breed; 5 = is a critical gap).

We similarly measured the perception of technological risk using the items corresponding to the five capabilities and the 2-step process as followed for people risk. We also measured the dimensions of technological risk by a count of the number of nodes in the organizational value chain where each of the technological capabilities were required. We used a 7-item format representing the different nodes in an organization's extended value chain (R&D, production, operations, sales & distribution, marketing, partners and customers) on each of the capabilities.

Finally, we measured desired outcomes through a 8-item scale of product range, service offering, market presence, customer engagement, supply chain, business model, organizational systems and employees (Ansoff, 1985; Porter, 1985/ 2004; Srivastava, Shervani & Fahey, 1998). A 5-item scoring format (1 = changed far too much; 5 = changed far too little) was used to assess the extent to which they were changed to manage business risk.

Based on the above scales, a preliminary survey instrument was developed. This was tested for clarity and appropriateness with 3 managers (across functions & levels) and 2 academicians. The respondents were asked to complete the questionnaire, and indicate any difficulties experienced in responding to the items, as well as offer any suggestions they deemed appropriate. In order to ensure construct validity, we asked the experts to assess whether the questions and scale items were representative of the underlying constructs that we were seeking to measure. Several minor modifications were suggested, to incorporate which we reduced length and altered wording, till the experts felt comfortable with the questionnaire. The items that were developed and refined were subjected to yet another phase of pre-tests involving personal interviews with 3 managers, who were asked to complete the questionnaire as applicable to their business unit. At this stage very few concerns were raised, and only minor refinements were required which were carried out.

The questionnaire was developed using Qualtrics (software), and a copy of the online survey instrument is included as Annexure[11].

6.4 Data Collection and Sample Description

Previous literature has recommended the use of purposive sampling for obtaining a knowledgeable sample that can provide a broad set of response (Patton, 1990; Challagalla, Murtha & Jaworski, 2014). We decided to tap into

[11] SMU Institutional Review Board Approval Number: IRB-18-133-E033(1118).

our extensive LinkedIn network[12] to draw on the sample for the survey, in order to target a total of 200 respondents covering a wide range of industries, organizations and respondent characteristics. LinkedIn[13] is the most successful and comprehensive professional medium consisting of an active user base of 260M, including 56M users from India, and is designed to encourage exchange of information amongst members making it a legitimate and high-involvement setting for professional managers (Mintz & Currim, 2013).

From our list of contacts, 500 names were selected at random, after first eliminating those whose titles suggested that were they not in a professional role or were relatively inexperienced (less than five years of work experience). We sent a personalized email giving brief details of the survey and its objective, estimated time required for completion (~20 min) and a link to the online survey. We guaranteed anonymity to ensure validity of responses and offered managers a summary report of the survey findings, to encourage response. A reminder email was sent to all the informants (excluding those who had voluntarily sent a reply confirming completion) after 10 days. A third reminder was sent only to those informants who requested for a reminder as they were away or on vacation.

We received a total of 182 completed surveys suggesting a response rate of 36.4%. The respondents had an average experience of 23.6 years (minimum cut-off 5, maximum 38 years) representing 4202 years of combined experience.

[12] 2,141 connections as on April 28, 2019 (linkedin.com/in/prakashbagri)
[13] We Are Social, & DataReportal, & Hootsuite. (n.d.). *Leading countries based on number of LinkedIn users as of April 2019 (in millions)*. In Statista - The Statistics Portal. Retrieved from https://www.statista.com/statistics/272783/linkedins-membership-worldwide-by-country/

They had spent an average of 9.4 years in their current organization and 6.6 years in their current role. 50 of the respondents were founders, owners or partners of their company; 90 of them were in general management, 24 in sales & marketing and the remaining 66 in other functions.

From the organizational standpoint, 68 were from manufacturing, 76 from services and 36 from technology sector. 75 were Indian publicly companies, 49 privately held or venture funded and 49 were multi-national companies (MNC). 83 companies had business customers (B2B) while 98 had consumer (B2C) or both business and consumer as customers. 119 of the companies operated upstream (suppliers of components, materials or services to other businesses) and the remaining 62 operated downstream, having direct touch with end-users. Lastly, 75 companies were in business for 30 years or more, 62 has been operational from 10 – 29 years and 44 were young companies (less than 10 years). Sample characteristics are summarized in Table IX.

Table IX: Survey Sample Characteristics (n=182)

Respondent Experience		**Respondent Role**		**Respondent Function**		**Industry Sector**	
Mean	23.6	Owner/ Founder	50	General Management	90	Manufacturing	68
Min	5	Corporate Exec (CxO)	50	Sales & Marketing	24	Services	76
Max	38	Other Management	45	Other Functions	66	Technology	36
Total	4202	Individual Contributor	35				
Company Profile		**Company Customers**		**Company Operations**		**Company Age**	
Indian Public	75	B2B	83	Upstream	119	> 30 yrs	75
Indian Private	49	B2C	98	Downstream	62	10 - 30 yrs	62
MNC	44					< 10 yrs	44

6.5 Scale Transformation and Development of Measures

6.5.1 Scale Transformation

We carried out appropriate scale transformation for specific questions in order to aid analysis. Particularly, certain independent variables were converted into categorical variables as detailed.

The survey instrument used a 11-item scale based on the Industry Classification Benchmark (FTSE Russel, 2018) to identify company or unit's sector of primary business activity. Subsequently, we individually reviewed all the responses under the 'Other (11)' option which were supplemented with a descriptor, and reclassified them as follows:

- Steel included under 'Energy, Chemicals, Forestry & Mining (29)'
- Consumer Electronics, Retail included under 'Personal & Household (30)'
- Sports, Movies included under 'Media, Travel, Hospitality & Leisure (13)'
- Remaining responses were retained under the 'Other' option.

For the purpose of analysis, we recoded the 10 different industry segments under three categorical variables representing manufacturing, services and technology sectors respectively, as follows:

- IND_mfg with the following being recoded as (1) and others (0):
  Energy, Chemicals, Forestry & Mining (29); Aerospace, Defence & Engineering (31); Infrastructure, Construction, Real Estate & Utilities (3); Automobile, Transportation & Logistics (5); Food & Beverages (28) and Personal & Household (30).
- IND-svcs with the following being recoded as (1) and others (0): Banking, Finance & Insurance (1); Pharmaceutical, Healthcare & Social (4); Education (7); Media, Travel, Hospitality & Leisure (13) and Professional, Scientific & Legal (10).

- IND_tech with Information Technology & Telecommunications (2) recoded as (1) and all others (0).

The survey instrument used a 6-item scale to measure company ownership. For the purpose of analysis, we recoded the 6 ownership segments under a categorical variable CO_mnc with Multi-National/ Foreign Company (5) being recoded as (1) and all others (0).

The survey instrument used a standard 6-item scale to measure primary job title of the respondent. For the purpose of analysis, we recoded it under two categorical variables as follows:

- RESP_ceo with the following being recoded as (1) and others (0): Owner/ Founder/ Partner/ Principal or Equivalent (1) and Chief Executive Officer or Equivalent (2).
- RESP_sr_mgr with the following being recoded as (1) and others (0): Corporate Executive (COO/CSO/CMO/CFO/CIO) or Equivalent (3) and Senior Management (VP/ Director) or Equivalent (4).

The survey instrument used a standard 10 point scale to measure primary job function of the respondent. Subsequently, we individually reviewed all the responses under the 'Other Business Management (10)' option which were supplemented with a descriptor, and reclassified them as under:

- Delivery Assurance, Business Consulting under 'Operations (7)'
- Sustainability, Legal etc. under 'Administration (9)'.
- Remaining responses were retained under the 'Other (10)' option.

For the purpose of analysis, we recoded it under a categorical variable RESP_job_bkend with the following being recoded as (0) and all others (1): General Management (1) and Sales & Marketing (9)

The survey instrument used a 7-item scale to measure primary role of the company in its industry value network. Subsequently, we reviewed all the responses under the 'Other (7)' option which were supplemented with a descriptor, and reclassified them under the 6 options.

For the purpose of analysis, we recoded it under a categorical variable CO_downstream with the following being recoded as (1) and all others (0): Supplier (1), Manufacturing (2) and Service Provider (5).

Additionally, the survey instrument measured market uncertainty and competitive volatility using existing scales (Atuaheme-Gima & Li, 2002: Clauss, 2016). Market uncertainty was measured on two dimensions (stable – unstable and changes slowly – changes rapidly) using a 5 point Likert scale. We combined the scores against both these items in a single continuous variable, IND_uncertainty as a measure for market uncertainty (scale of 1-10).

Similarly, competitive volatility was measured on four dimensions (few – many competitors; weak – strong competition; similar – differentiated customer offerings and similar – differentiated business models) using a 5 point Likert scale. We combined the overall scores in a single continuous variable IND_volatility as a measure for competitive volatility (on a scale of 1-10).

Finally, we retained respondent experience (RESP_exp) as a continuous variable for subsequent analysis.

Appendix I provides a table with the details of all other variables as captured from the survey.

6.5.2 Development of Measures

We carried out appropriate steps to develop measures for the key constructs from our hypotheses for this stage of research, namely overall interpretation of business risk, interpretation of people risk and interpretation of technological risk; dimensions of technological risk perception; and overall organizational risk action. We developed these measures as detailed.

RISK_QUANTUM as a measure of the overall interpretation of business risk.

The survey instrument used a 3+1 point scale to capture responses on the extent of risk and challenges faced across 7 different facets of risk (viz., risk interpretation), as follows: Greatly (1), To some extent (2), Not at all (3) and No opinion (4).
For the purposes of analysis, we transformed this scale in order to represent risk interpretation as follows: Not at all (3) → 0, No opinion (4) → 1, To some extent (2) → 2 and Greatly (1) →3.
We thus developed RISK_QUANTUM as a measure of the overall interpretation of business risk, represented by the sum of the interpretation of risk against each of the seven facets of risk (min = 0, max = 21).

PRISK_QUANTUM as a measure of the overall interpretation of people risk.

The survey instrument used a 5+1 point scale to measure level of organizational capability across 10 different aspects of people risk, with 1 to 5 reflecting a 5-point 'best-of-breed' to 'is a critical gap', and 6 with no opinion.
In order to represent the interpretation of risk as faced across each of the 10 aspects of people risk as follows, we transformed this scale as follows: No opinion (6) → 4, Needs improvement (4) → 5, Is a critical gap (5) → 6, with the scale score for remaining being retained, viz Best-of-breed (1) → 1, Well developed (2) → 2 and Meets requirements (3) →3.
We thus developed PRISK_QUANTUM as a measure of the overall interpretation of people risk, represented by the interpretation of risk against

each of the 10 aspects of people risk, and measured as the sum of the risk interpretation scores across these 10 aspects (min = 0, max = 60).

TRISK_QUANTUM as a measure of the overall interpretation of technological risk.

The survey instrument used the earlier referenced 5+1 point scale to measure level of organizational capability across 5 different aspects of technological risk. In order to represent the interpretation of risk as faced across each of the 5 aspects of technological risk we transformed this scale as done for PRISK_QUANTUM.
We thus developed TRISK_QUANTUM as a measure of the overall interpretation of technological risk, represented by the interpretation of risk against each the 5 aspects of technological risk, and measured as the risk interpretation scores across these 5 aspects (min = 0, max = 30).

TRISK_VALCH_TOTAL as a measure of the overall multidimensionality of technological risk.

The survey instrument sought responses on 7 different nodes of the organization that require to deal with the 5 specific facets of technology risk, in order to measure the dimensions of each facet.
We developed TRISK_VALCH_TOTAL as a measure of the overall multidimensionality of technological risk, represented by the presence of perceived technological risk across the 7 nodes of the organizational value network and separately for each of the 5 aspects of technological risk. This is measured as the total count of the risk incidences, viz., mentions (✓) across this 7x5 matrix (min = 0, max = 35).

Lastly, CHANGE_QUANTUM as a measure of the overall assessment of outcomes arising out of the risk management efforts.

The survey instrument used a 5+1 point scale to measure the success of organizational efforts towards changing business parameters in order to address risk (viz., outcomes of risk management action), with 1 to 5 reflecting a 5-point 'changed far too much' to 'changed far too little', and 6 with no opinion.
For the purposes of analysis, we transformed this scale in order to represent the extent of risk action across each of the business parameters as follows: Changed far too little (5) → 1, Changed too little (4) → 2, No opinion (6) → 3, Changed about right (3) → 4, Changed too much (2) → 5 and Changed far too much (1) →6.

We thus developed CHANGE_QUANTUM as a measure of the overall assessment of outcomes arising out of the risk management efforts, represented by the sum of the change scores across the eight business parameters (min = 0, max = 48).

The descriptive statistics against the key constructs developed as a part of this research is provided in Table X.

Table X: Descriptive Statistics of Key Constructs

N	RISK_QUANTUM	PRISK_QUANTUM	TRISK_QUANTUM	TRISK_VALCH_TOTAL	CHANGE_QUANTUM
Valid	181	165	155	145	176
Missing	0	16	26	36	5
Mean	15.68	32.58	17.75	13.66	25.29
Median	16	33	18	13	26
Mode	17	22*	21	13	24
Std. Deviation	3.10	9.61	5.59	7.43	6.96
Minimum	5	2	6	1	5
Maximum	21	52	30	33	41

*Multiple modes exist. The smallest value is shown

Table XI: Correlations

		RESP_exp	IND_mfg	IND_svcs	IND_tech	CO_b2b	CO_mnc	CO_young	RESP_sr_mgr	RESP_job_bkend	CO_downstream	IND_uncertainty	IND_volatility	RISK_QUANTUM	PRISK_QUANTUM	TRISK_QUANTUM	TRISK_VALCH_TOTAL	TECH_CHG_QUANTUM	CHANGE_QUANTUM
RESP_exp	Pearson Correlation																		
	Sig. (2-tailed)																		
	N	178																	
IND_mfg	Pearson Correlation	-0.043																	
	Sig. (2-tailed)	0.566																	
	N	178	181																
IND_svcs	Pearson Correlation	0.136	-.660**																
	Sig. (2-tailed)	0.071	0																
	N	178	181	181															
IND_tech	Pearson Correlation	-0.135	-.387**	-.424**															
	Sig. (2-tailed)	0.073	0	0															
	N	178	181	181	181														
CO_b2b	Pearson Correlation	-0.071	-.187*	-0.087	.319**														
	Sig. (2-tailed)	0.348	0.012	0.247	0														
	N	178	181	181	181	181													
CO_mnc	Pearson Correlation	-0.096	-0.014	-0.143	.202**	.151*													
	Sig. (2-tailed)	0.201	0.851	0.055	0.006	0.043													
	N	178	181	181	181	181	181												
CO_young	Pearson Correlation	-.159*	-0.12	0.144	-0.057	-0.005	-.201**												
	Sig. (2-tailed)	0.034	0.106	0.053	0.45	0.951	0.007												
	N	178	181	181	181	181	181	181											
RESP_sr_mgr	Pearson Correlation	.226**	-0.033	-0.015	0.07	-0.101	0.138	-0.125											
	Sig. (2-tailed)	0.002	0.658	0.842	0.349	0.175	0.064	0.095											
	N	178	181	181	181	181	181	181	181										
RESP_job_bkend	Pearson Correlation	-0.042	0.02	-0.026	0.019	-0.04	.152*	-.168*	0.116										
	Sig. (2-tailed)	0.58	0.794	0.726	0.796	0.597	0.041	0.024	0.12										
	N	178	181	181	181	181	181	181	181	181									
CO_downstream	Pearson Correlation	-0.005	-.161*	.189*	-0.049	.407**	-0.025	0.056	-0.119	0.143									
	Sig. (2-tailed)	0.951	0.03	0.011	0.515	0	0.736	0.452	0.112	0.054									
	N	178	181	181	181	181	181	181	181	181	181								
IND_uncertainty	Pearson Correlation	-0.052	-.192**	0.019	.209**	0.105	0.003	-.157*	0.055	0.029	-0.072								
	Sig. (2-tailed)	0.49	0.01	0.797	0.005	0.159	0.968	0.035	0.464	0.698	0.338								
	N	178	181	181	181	181	181	181	181	181	181	181							
IND_volatility	Pearson Correlation	-0.098	-0.024	-0.081	0.117	0.001	-0.002	0.021	-0.021	-0.006	-0.019	.200**							
	Sig. (2-tailed)	0.194	0.746	0.28	0.117	0.987	0.978	0.784	0.781	0.931	0.802	0.007							
	N	178	181	181	181	181	181	181	181	181	181	181	181						
RISK_QUANTUM	Pearson Correlation	0.045	0.003	-0.06	0.07	-0.044	.209**	-0.12	.184*	0.02	-.154*	.180*	.296**						
	Sig. (2-tailed)	0.547	0.969	0.42	0.352	0.552	0.005	0.106	0.013	0.787	0.039	0.015	0						
	N	178	181	181	181	181	181	181	181	181	181	181	181	181					
PRISK_QUANTUM	Pearson Correlation	-.175*	0.144	-.217**	0.093	0.038	0.096	-0.073	0.043	0.093	-0.07	0.14	-0.061	0.084					
	Sig. (2-tailed)	0.026	0.066	0.005	0.235	0.632	0.221	0.355	0.584	0.232	0.375	0.072	0.44	0.281					
	N	162	165	165	165	165	165	165	165	165	165	165	165	165	165				
TRISK_QUANTUM	Pearson Correlation	-0.012	.356**	-0.154	-.223**	-0.097	-0.055	-.200*	0.057	-0.022	-0.053	0.014	-0.112	0.154	.485**				
	Sig. (2-tailed)	0.881	0	0.056	0.005	0.23	0.499	0.012	0.48	0.784	0.51	0.867	0.164	0.055	0				
	N	152	155	155	155	155	155	155	155	155	155	155	155	155	155	155			
TRISK_VALCH_TOTAL	Pearson Correlation	0.02	-0.008	-0.031	0.068	-.169*	.250**	-0.117	0.125	-0.052	-.251**	0.077	0.11	.316**	0.08	-0.114			
	Sig. (2-tailed)	0.812	0.92	0.709	0.419	0.043	0.002	0.161	0.133	0.531	0.002	0.356	0.187	0	0.344	0.181			
	N	142	145	145	145	145	145	145	145	145	145	145	145	145	144	140	145		
TECH_CHG_QUANTUM	Pearson Correlation	0.117	-0.046	0.045	0.003	-0.134	.318**	-.213**	.303**	0.04	-.169*	0.123	0.01	.265**	-0.144	-0.094	.554**		
	Sig. (2-tailed)	0.161	0.579	0.585	0.969	0.106	0	0.01	0	0.631	0.041	0.137	0.902	0.001	0.082	0.26	0		
	N	144	147	147	147	147	147	147	147	147	147	147	147	147	147	146	131	147	
CHANGE_QUANTUM	Pearson Correlation	-0.066	0.031	0.001	-0.043	-0.125	-0.018	0.017	-0.017	0.024	-0.087	-0.014	.244**	.278**	-.271**	-0.149	.197*	0.023	
	Sig. (2-tailed)	0.388	0.685	0.985	0.569	0.099	0.817	0.823	0.824	0.752	0.253	0.849	0.001	0	0	0.065	0.018	0.786	
	N	173	176	176	176	176	176	176	176	176	176	176	176	176	165	155	145	147	176

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

7 Survey Data, Analyses and Results

We present the results of our survey in the next three sections. We first share highlights of managerial prioritization amongst the constructs developed in this survey, and in the context of their business. We then describe the data analysis undertaken to test our hypotheses and the outcomes. Lastly, we discuss these results. Table XI provides the correlation matrix of all variables from the survey.

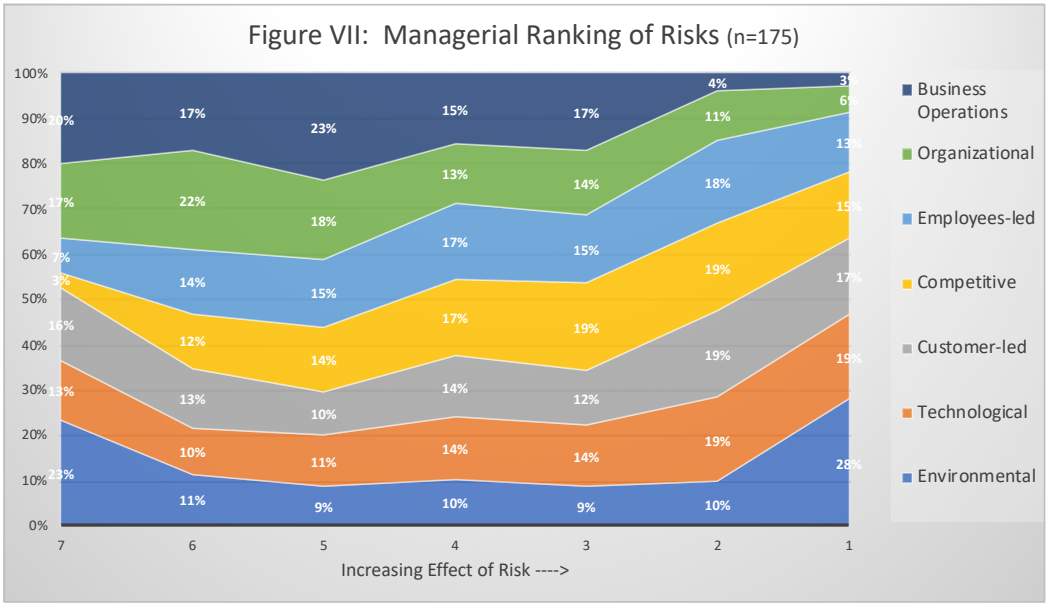
7.1 Risk Prioritization

We asked respondents to do an ordinal ranking amongst the seven facets of business risk in terms of the effect on each on their business. 175 respondents completed the ranking of all seven facets. The results of the prioritization amongst the different facets of business risk is graphically illustrated as an area chart in Figure VII[14].

Maximum number of respondents (28%) rated environmental risk as the gravest risk faced by their firm. Interestingly, the largest number of respondents also rated it as the least of their concerns (23%). The dumbbell shape of environmental risk highlights extremity of managerial views about its impact. Respondent views about the prioritization of technological risk (19% → 13%)

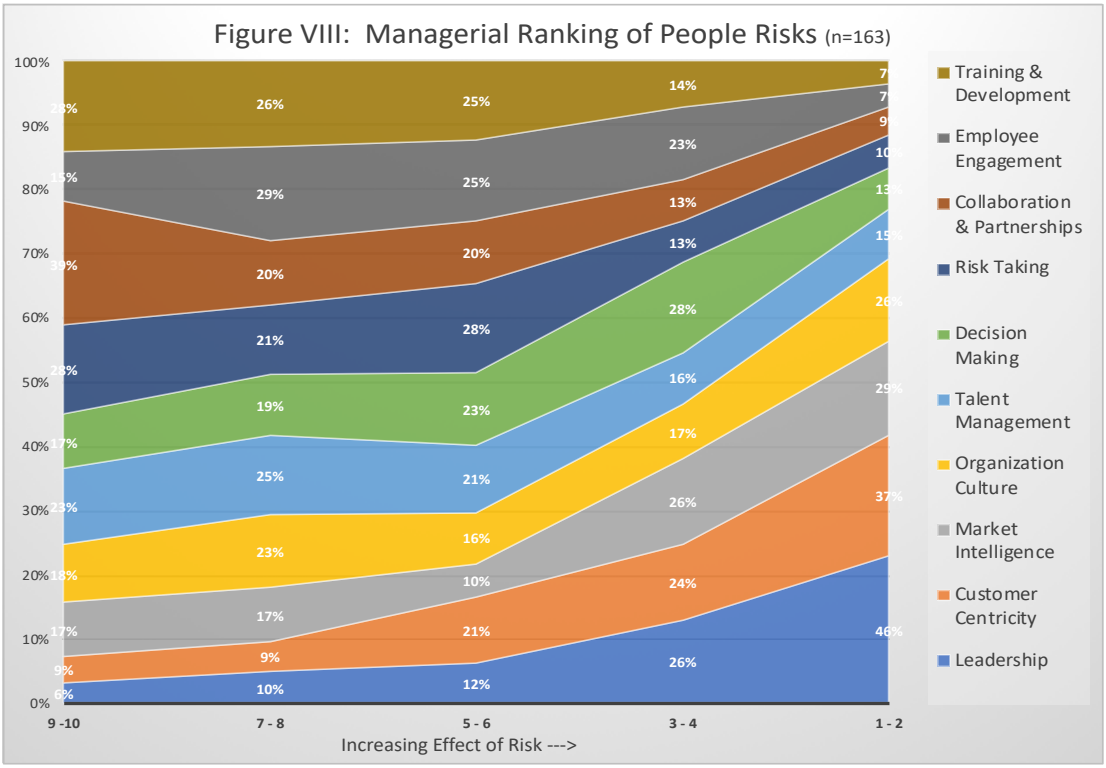
[14] In this chart the following trend shapes may be noted as indicative: risk funneling out towards the right denotes increasing prioritization (greater number of people consider it as more critical); funneling out towards the left denotes decreasing prioritization (more people consider it less critical); cylindrical band denotes uniform prioritization (people have distributed view on its prioritization); a dumbbell shape denotes extremity in prioritization (people have divergent views on its prioritization).

and customer-led risk (17% → 16%) show a cylindrical and fairly even spread across the rankings. Most managers also view competitive risk (15% → 3%) and employee-led risk (17% → 7%) as important with the trend showing a slight funnel towards the higher ranks. However, organizational (6% → 17%) and operational risk (3% → 20%) do not appear as a primary concern. The expanded funnel towards the left suggest that most managers believe these facets of business risk are under control.



We similarly asked respondents to do an ordinal ranking amongst the ten aspects of people related competencies in terms of the importance of each to their business. This provides us an understanding of the criticality of the corresponding risk in the organizational context. 163 respondents completed this part of the survey.

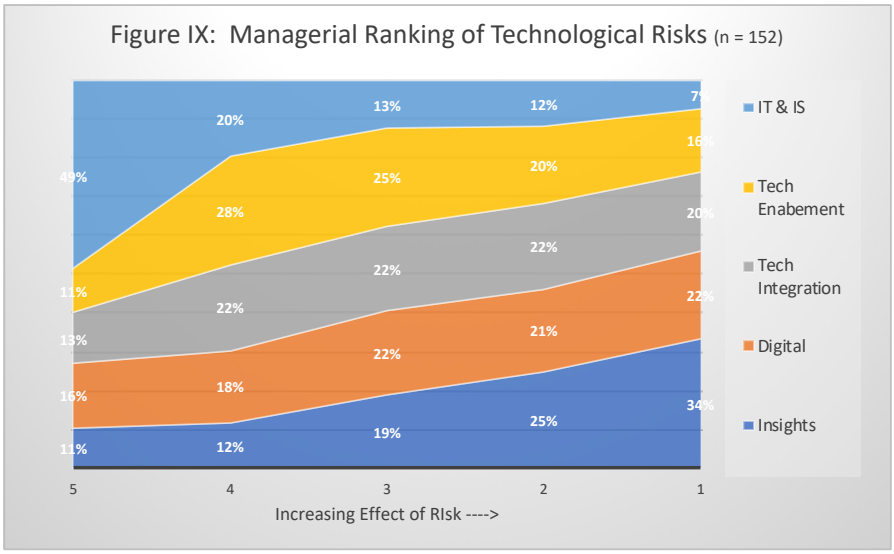
The result of the prioritization is graphically illustrated as an area chart in Figure VIII (we club the 10 ranks into 5 equal bands to aid visual comprehension).



Almost half the respondents rated leadership within the top two risks for their organization, and more than a third rated customer-centricity in the most critical band. These risks show the sharpest funnel towards the right (46% → 6% and 37% → 9% respectively), suggesting that the majority of the respondents prioritize them as the most critical aspects of people risk that they need to manage. Respondents views on market intelligence (29% → 17%) and organizational culture (26% to 18%) shows a cylindrical and fairly even spread across the rankings. Surprisingly, talent management (15% →23%), decision making (13% → 17%) and employee engagement (7% - 15%) do not appear to be primary concerns and the noticeable funnel towards the left suggests that more managers see these as well controlled and therefore not a risk. 2 out of 5

respondents put collaboration & partnership (9% → 39%) and 1 out of 4 put both risk taking (10% → 28%) and training & development (7% → 28%) in the least critical band. The sharply expanded funnels towards the left could suggest that organizations either have good control on these aspects or that they don't see them as risks.

Lastly, we got respondents to ordinally rank the five technological competencies in terms of the importance of each to their business, and their responses provide us insights into managerial prioritization amongst aspects of technological risk (Figure IX). This section was completed by 152 respondents.



One out of 3 respondents ranked insights (using increasing data for insightful decision making) as their biggest challenge, and the risk showed a sharp funnel towards the right (34% → 11%). Respondents view both digital capability (22% → 16%) and technology enablement (20% → 13%) as critical for their business, as suggested by both the bands slightly tapering towards the right. Whereas technology integration (16% → 11%) appears to be still important, almost half

the respondents rank information technology & information systems (7% → 49%) as the least critical.

Overall, managerial rankings of the seven facets of business risk showed sharp divergence between certain facets. However, there is much more alignment on the prioritization of the different aspects of people related risk and technological risk. We discuss these rankings along with the results from hypothesis testing later in this section.

Appendix II provides the detailed data tables pertaining to the risk prioritizations discussed above.

7.2 Hypothesis Testing

We used IBM SPSS Statistics for Macintosh (Version 25.0) and StataCorp. Stata Statistical Software (Release 15) for hypothesis testing.

In order to test H_1, for the existence of two latent groups within the seven facets of business risk, the risk interpretation scores of the individual facets were subjected to an exploratory factor analysis (EFA) with Quatrimax rotation. The Kaiser-Meyer-Olkin measure verified sampling adequacy for the analysis KMO = 0.655. Bartlett's test of sphericity χ^2 (21) = 126.82, p <0.001 and Cornbach α = 0.591 (for 7 factors) indicates the correlation is borderline acceptable for factor analysis. The maximum likelihood factor analysis with a cut-off point of 0.4 and Kaiser's criteria of eigen values >1 yielded a 3-factor solution as the

best fit for the data, accounting for 61.24% of the variance. The Scree plot indicated that the other solution could be a 2-factor model (which was more consistent with our hypothesis). Environmental risk appeared as an isolated item and did not load with any of the factors either in the unrotated or rotated solutions. We replicated the model through a confirmatory factor analysis (CFA) with a structured equation model (SEM) using Stata. Maximum likelihood (ML) extraction was used to estimate the model. This model did not show a good fit (CFI = 0.888, TLI = 0.804, RMSEA = 0.074, AIC = 2924.18, BIC = 2997.75)[15].

The results at this stage appeared consistent with our observations and suggests that perceptions of environmental risk do not show similar traits as other facets of risk. It appears that environmental risk, on account of being mostly uncontrollable, are considered outside the purview of regular risk management efforts. We thus decided to exclude it while developing our model for analyzing the latent factors of business risk.

The risk interpretation scores of the remaining 6 facets of business risk were subjected to another EFA under the same conditions. This model (KMO =

[15] The chi-squared test indicates the difference between observed and expected covariance matrices. Values closer to zero indicate a better fit. The comparative fit index (CFI) compares the target model to the fit of an independent model. The Tucker Lewis index (TLI) analyzes the discrepancy between the chi-squared value of the hypothesized model and the chi-squared value of the null model. Values exceeding 0.95 indicate acceptable fit. The root mean square error of approximation (RMSEA) informs us how well the model, with unknown but optimally chosen parameter estimates would fit the population covariance matrix. A range of 0.05 to 0.10 is considered an indication of good fit. The Akaike Information Criterion (AIC) is a parsimony fit index that is especially fitted to compare non-nested models estimated with the same data in order to decide which model is more parsimonious. The Bayesian information criterion (BIC) is another information criterion that selects a model relative to its likelihood function and number of parameters with a penalty for a larger number of parameters.

0.718, χ^2 (15) = 107.64, p <0.001) with Cornbach $\alpha = 0.622$ (for 6 factors) indicated a better fit. The result of this factor analysis is presented in Table XII.

Table XII: Exploratory Factor Analysis of Business Risk Facets

Items	Rotated Component Matrix** Components 1	2	Dimension
Consumer-led	0.745		Market-facing Risks
Competitive	0.445		
Operations	0.690		
Technological	0.741		
Organizational		0.813	Organization-facing Risks
Employee-led		0.551	

Extraction Method: Principal Component Analysis.
Rotation Method: Quartimax with Kaiser Normalization.
**Rotation converged in 3 iterations.

The two factors as emerging from this analysis were consumer-led risk, competitive risk, operational risk and technological risk which we label as 'market-facing risks' and employee-led and organizational risk which we label as 'organization-facing risks.

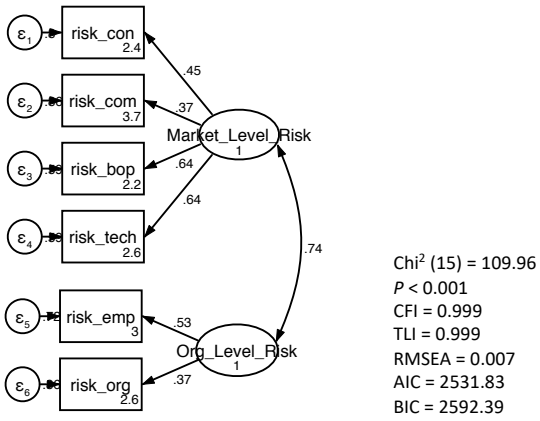


Figure X: Two Factor Model of Business Risks

This model was replicated with a CFA (Figure X) and the model showed a good fit (χ^2 (15) = 109.96, p <0.001, CFI = 0.999, TLI = 0.999, RMSEA = 0.007, AIC = 2531.83, BIC = 2592.39). Thus, H_1 is validated.

The next six hypotheses (H_{2a}, H_{2a}, H_3, H_4, H_5 & H_6) related to the antecedents of risk interpretation. We test these hypotheses not only for interpretation of business risk, but also for the interpretation of market-facing risk and organization-facing risk (using extracted factor scores as obtained from the factor analysis above, viz ORisk_FACTQ_Mkt and ORisk_FACTQ_Org).

These were tested by estimating the following regression equations:

$Y_1 = b_{11}X_1 + b_{12}X_2 + b_{13}X_3 + \ldots\ldots\ldots\ldots + b_{18}X_8 + e_1$ …Equation (i)
$Y_2 = b_{21}X_1 + b_{22}X_2 + b_{23}X_3 + \ldots\ldots\ldots\ldots + b_{28}X_8 + e_2$ …Equation (ii)
$Y_3 = b_{31}X_1 + b_{32}X_2 + b_{33}X_3 + \ldots\ldots\ldots\ldots + b_{38}X_8 + e_3$ …Equation (iii)

where Y_1 denotes overall risk interpretation, Y_2 denotes marketing-facing risk interpretation and Y_3 denotes organization-facing risk interpretation, and X_1 to X_8 denotes respondent experience, company origin, company customer, company operations, sectors (services and manufacturing), industry uncertainty and industry volatility. The *e*'s are the error terms.

The tolerance values for 7 of the independent variables ranged from 0.70 to 0.96 (the dummy variables for industry sector had a tolerance of 0.46 & 0.47), suggesting no concern of multicollinearity in the data. The data met the assumption of independent errors (Durbin-Watson[16] value of 2.18, 1.92 and 2.21 respectively). The normal probability plot of the residuals and the plot of standardized residuals showed that the data met the assumptions of homogeneity of variance and linearity.

[16] The Durbin Watson Test measures autocorrelation in residuals from regression analysis, where 2 is no autocorrelation and values in the range 1.5 to 2.5 are considered normal.

The results obtained from estimating Equations (i) to (iii) are provided in Table XIII. The regressions on overall business risk interpretation and market-facing risk interpretation were significant[17]: F (8,169) = 4.80, p<0.001; R^2 =0.185 and F(8,167) = 4.70, p<0.001; R^2 =0.184. However, the regression on organization-facing risk was not significant though we still report the results in order to ensure completeness [F (8,169) = 1.69, p=0.104; R^2 =0.075].

Table XIII: Antecedents to Risk Interpretation

	Dependent Variable: Risk Interpretation								
	Overall Business Risk			Marketing-facing Risk			Organization-facing Risk		
Independent Variables	β	t-value	*Sig*	β	t-value	*Sig*	β	t-value	*Sig*
Individual									
Experience	0.10	1.35	0.178	0.15	2.12	0.036	-0.06	-0.77	0.440
Organizational									
Origin (MNC)	0.23	3.24	0.001	0.20	2.72	0.007	0.13	1.73	0.086
Customer (B2B)	-0.03	-0.35	0.729	0.01	0.13	0.900	0.03	0.39	0.700
Operations (upstream)	-0.12	-1.57	0.117	-0.21	-2.64	0.009	0.04	0.53	0.599
Sector									
Services	0.05	0.51	0.611	0.05	0.52	0.605	-0.07	-0.59	0.555
Manufacturing	0.06	0.57	0.566	0.08	0.83	0.408	-0.15	-1.34	0.183
Industry Uncertainty	0.14	1.95	0.053	0.12	1.57	0.118	0.08	0.96	0.338
Industry Volatility	0.28	3.93	0.000	0.26	3.54	0.001	0.10	1.30	0.195
Overall Model	F (8,169)=4.80, p <0.001 R^2=0.19			F (8,167)=4.70, p <0.001 R^2=0.18			F (8,167)=1.69, p =.104 R^2=0.08		

Additionally, H_{2b} considered the influence of industry sector as the moderator. Accordingly, Equations (i) to (iii) were re-estimated as follows:

$$Y = bX_1 + bX_2 + \ldots\ldots + bX_9 + bX_{10} + e, \quad \ldots \text{Equations (i) to (iii) re-estimated}$$

where X_9 and X_{10} denote the interaction variables between experience (the major independent variable) and the industry sectors (services and manufacturing respectively). The results obtained from re-estimating Equations (i) to (iii), post considering the moderating effect of industry sector are provided in Table XIV.

[17] Given the exploratory nature of our study, we consider p<.10 as significant.

We observe that the moderating effect of industry sector is significant in each of the three cases [F(2,167) =3.43, p<.05, ΔR^2 = 0.032; F(2,165) =2.94, p<.10, ΔR^2 = 0.028; F(2,165) =2.35, p<.10, ΔR^2 = 0.026].

Table XIV: Antecedents of Risk Interpretation with Moderation Effect

	Dependent Variable: Risk Interpretation, Moderator: Industry Sector								
	Overall Business Risk			Marketing-facing Risk			Organization-facing Risk		
Independent Variables	β	t-value	*Sig*	β	t-value	*Sig*	β	t-value	*Sig*
Individual									
Experience	0.43	2.88	0.004	0.47	3.13	0.002	-0.07	-0.43	0.666
Organizational									
Origin (MNC)	0.25	3.50	0.001	0.21	2.95	0.004	0.13	1.72	0.088
Customer (B2B)	-0.01	-0.17	0.869	0.03	0.39	0.694	0.02	0.18	0.858
Operations (upstream)	-0.14	-1.81	0.072	-0.23	-2.91	0.004	0.05	0.63	0.530
Sector									
Services	0.04	0.37	0.713	0.04	0.34	0.731	-0.05	-0.50	0.617
Manufacturing	0.03	0.27	0.787	0.05	0.53	0.597	-0.14	-1.30	0.194
Industry Uncertainty	0.15	1.99	0.048	0.11	1.50	0.135	0.09	1.17	0.242
Industry Volatility	0.27	3.73	0.000	0.25	3.44	0.001	0.09	1.14	0.258
Interaction Variables									
Experience x Services	-0.28	-2.54	0.012	-0.22	-1.95	0.053	-0.12	-0.98	0.327
Experience x Manufacturing	-0.26	-2.11	0.036	-0.28	-2.35	0.020	0.11	0.88	0.380
Interaction Effect	F(2,167)=3.43, p =0.035 △R^2=0.032			F(2,165)=2.94, p =0.056 △R^2=0.028			F(2,165)=2.35, p =0.099 △R^2=0.026		
Overall Model	F(10,167)=4.64, p <0.001 R^2=0.22			F (10,165)=4.44, p <0.001 R^2=0.21			F (10,165)=1.84, p =0.057 R^2=0.10		

The effect of managerial experience on interpretation of market-facing risk (β=0.15, p<0.05) is significant. However, the effect is not significant in the interpretation of overall business risk and organization-facing risk (model itself is not significant). Thus, H_{2a} hypothesizing the effect of experience on risk interpretation is not supported for overall business risk but supported for market-facing risk.

However, when moderated by industry segment, managerial experience has a significant effect on interpretation of both overall risk and market-facing risk, though the impact of experience on interpretation of organization-facing risk is still not significant. Thus, H_{2b} hypothesizing the moderating effect of industry sector on effect of experience is supported for both interpretation of overall

business risk and market-facing risk, but not supported for organization-facing risk.

We find a positive influence of MNC status on managerial risk interpretation for overall ($\beta = 0.23$, $p<0.01$), market-facing ($\beta = 0.20$, $p<0.01$) as well as organization-facing risk ($\beta = 0.13$, $p<0.10$). Thus, H_3 is supported for all three dependent variables.

We find a negative influence of upstream companies on managerial interpretation of market-facing risk ($\beta = -0.21$, $p<0.01$) though the influence is not significant for interpretation of overall business risk. Thus, H_4 is supported for market-facing risk, but not supported for overall business risk and organization-facing risk.

Industry uncertainty has a positive effect on interpretation of overall business risk ($\beta = 0.14$, $p<0.10$), though the effect is not significant on interpretation of market-facing risk. Thus, H_5 is supported only for overall business risk. The effect of competitive volatility is positive and similar for both overall as well as market-facing risk ($\beta = 0.28$, $p<0.001$; $\beta = 0.26$, $p<0.001$). Thus, H_6 is supported for overall business risk and market-facing risk. Both H_5 & H_6 are not supported for organization-facing risk.

In order to test H_7 for the existence of latent groups within the ten aspects of people risk, the risk interpretation scores of the individual aspects were

subjected to an exploratory factor analysis (EFA) with Quatrimax rotation. The correlation data was considered adequate for factor analysis based on the test scores (Kaiser-Meyer-Olkin measure verified sampling adequacy KMO = 0.819; Bartlett's test of sphericity χ^2 (45) = 412.27, p <0.001 and Cornbach α = 0.795, 10 factors). The maximum likelihood factor analysis with a cut-off point of 0.5 and Kaiser's criteria of eigen values >1 yielded a 2-factor solution accounting for 52.38% of the variance. The solution appeared to be heavily loaded on the first factor (7 items), and the item 'collaboration & partnership' (a critical finding from our field interviews, as it provides the extended view of people risk) did not fit into any of the factors and was rejected by this model. Additionally, the Scree plot indicated a 3-factor model as a better fit, with the third factor (EV = 0.942) together accounting for 61.79% of the variance.

We thus repeated the EFA with a 3-factor plan, and this suggested the three factor groups of talent management, employee engagement and training & development (which we call 'competence risk'); market intelligence, decision making and risk taking ('empowerment risk'); and organizational culture, customer centricity, leadership and collaboration & partnership ('engagement risk'). The rotated factor loadings are provided in Table XV.

Table XV: Exploratory Factor Analysis of People Risk Aspects

Items	Rotated Component Matrix** Components 1	2	Dimension
Talent Management	0.782		Competence Risk
Employee Engagement	0.797		
Training & Development	0.747		
Market Intelligence	0.734		Empowement Risk
Decision Making	0.773		
Risk Taking	0.803		
Organizational Culture		0.577	Engagement Risk
Customer Centricity		0.532	
Leadership		0.597	
Collaboration & Partnerships		0.737	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
**Rotation converged in 5 iterations.

We carried out a confirmatory factor analysis (CFA) on the same model (Figure XI). Maximum likelihood (ML) extraction was used to estimate the model. The model showed a good fit (CFI = 0.964, TLI = 0.950, RMSEA = 0.052, AIC = 4802.56, BIC = 4899.87). Thus, H_7 which hypothesized the presence of latent groups within the 10 aspects of people risk is validated, and we consider the three components, viz., competence risk, empowerment risk and engagement risk as the representation of people risk in its overall sense.

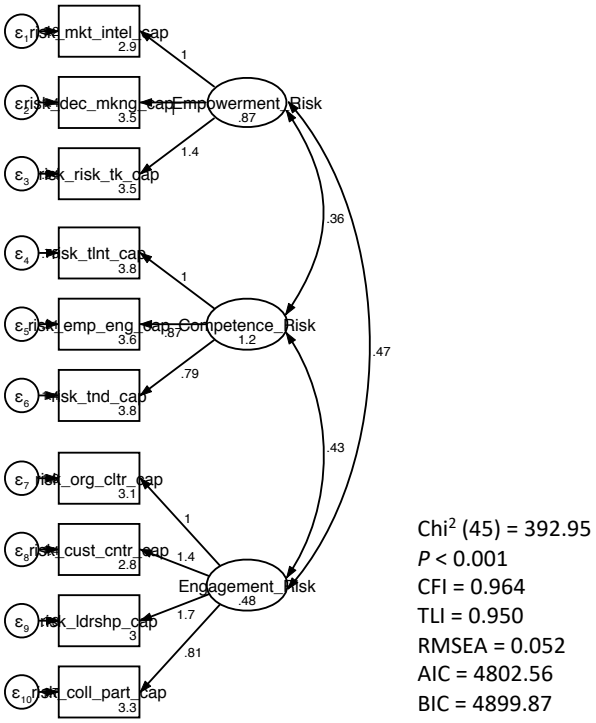


Figure XI: Three Factor Model of People Risks

We accordingly test H_8 relating to the effect of managerial experience on interpretations of people risk, for overall people risk as well as for competence risk, empowerment risk and engagement risk (using scores as obtained from the factor analysis above).

We tested the validity of H8 by estimating the following regression equations:

$Y_4 = b_{41}X_1 + b_{42}X_2 + b_{43}X_3 + \ldots\ldots\ldots\ldots + b_{48}X_8 + b_{49}X_9 + e_4$ …Equation (iv)
$Y_5 = b_{51}X_1 + b_{52}X_2 + b_{53}X_3 + \ldots\ldots\ldots\ldots + b_{58}X_8 + b_{59}X_9 + e_5$ …Equation (v)
$Y_6 = b_{61}X_1 + b_{62}X_2 + b_{63}X_3 + \ldots\ldots\ldots\ldots + b_{68}X_8 + b_{69}X_9 + e_6$ …Equation (vi)
$Y_7 = b_{71}X_1 + b_{72}X_2 + b_{73}X_3 + \ldots\ldots\ldots\ldots + b_{78}X_8 + b_{79}X_9 + e_7$ …Equation (vii)

where Y_4 denotes overall interpretation of people risk (PRISK_QUANTUM), Y_5 denotes interpretation of competence risk (PRISKF_Competence), Y_6 denotes interpretation of empowerment risk (PRISKF_Empowerment) and Y_7 denotes interpretation of engagement risk (PRISKF_Engagement). X_1 to X_9 denotes respondent experience, senior management, company origin, company customer, company operations, sectors (services and technology), industry uncertainty and industry volatility. The *e*'s are the error terms. In order to control for senior management perspectives, we additionally introduced a categorical variable in this analysis (RESP_sr_mgr), while the remaining variables are as used in the earlier regressions.

The tolerance values for 9 independent variables ranged from 0.65 to 0.93, suggesting no issues of multicollinearity with the data. The data met the assumption of independent errors (Durbin-Watson value of 2.04, 1.78, 2.10 and 1.91 respectively). The normal probability plot of the residuals and the plot of standardized residuals showed that the data met the assumptions of homogeneity of variance and linearity in each of the 4 regressions.

The results obtained from estimating Equations (iv) to (vii) are provided in Table XVI. The regression on overall people risk interpretation and empowerment risk interpretation were significant: $F(9,152) = 2.02$, $p=0.04$; R^2

=0.107 and F(9,129) = 3.06, p=0.002; R^2 =0.176. However, the regression on competence risk and engagement risk were not significant though we still report the results in order to ensure completeness [F (9,129) = 1.02, p=0.428; R^2 =0.066 and F (9,129) = 0.82, p=0.600; R^2 =0.054].

Table XVI: Effect of Experience on People Risk

	Dependent Variable: Risk Interpretation											
	Overall People Risk			Competence Risk			Empowerment Risk			Engagement Risk		
Independent Variables	β	t-value	*Sig*	β	t-value	*Sig*	β	t-value	*Sig*	β	t-value	*Sig*
Individual												
Experience	-0.16	-1.95	0.053	-0.06	-0.62	0.536	-0.09	-1.07	0.285	-0.030	-0.332	0.740
Senior Manager	0.07	0.87	0.388	0.03	0.30	0.764	0.26	3.15	0.002	-0.138	-1.550	0.123
Organizational												
Origin (MNC)	0.04	0.49	0.628	0.03	0.34	0.734	0.08	0.90	0.369	-0.07	-0.78	0.435
Customer (B2B)	0.04	0.46	0.645	0.07	0.65	0.516	0.00	0.05	0.961	-0.03	-0.25	0.804
Operations (upstream)	-0.03	-0.31	0.757	-0.11	-1.15	0.253	-0.09	-0.95	0.343	0.11	1.17	0.244
Sector												
Services	-0.23	-2.57	0.011	-0.16	-1.67	0.097	-0.15	-1.64	0.104	-0.05	-0.47	0.641
Technology	-0.05	-0.50	0.618	-0.18	-1.75	0.083	0.09	0.91	0.366	0.05	0.44	0.660
Industry Uncertainty	0.15	1.78	0.077	0.02	0.25	0.801	0.10	1.20	0.232	0.11	1.20	0.232
Industry Volatility	-0.11	-1.33	0.186	-0.13	-1.52	0.132	-0.14	-1.64	0.104	-0.04	-0.43	0.666
Overall Model	F (9,152)=2.02, p =0.040 R^2=0.11			F(9,129)=1.02, p =0.428 R^2=0.07			F (9,129)=3.06, p =0.002 R^2=0.18			F (9,129)=0.82, p =0.600 R^2=0.05		

The effect of managerial experience on overall interpretation of people risk was significant (β = -0.16, p <0.10), and as hypothesized. However, it is not significant for any of the three dimensions of people risk. Thus, H8 is supported only for overall people risk but not for any of the dimensions of people risk.

We tested the validity of H_{9a}, H_{9b} & H_{9c}, viz influence of organizational variables on the multidimensional interpretation of technological risk. We also replicated the test for the unidimensional measure of technological risk interpretation.

These were tested by estimating the following regression equations:

$Y_8 = b_{81}X_1 + b_{82}X_2 + b_{83}X_3 + \ldots\ldots\ldots\ldots + b_{88}X_8 + b_{89}X_9 + e_8$ …Equation (viii)

$Y_9 = b_{91}X_1 + b_{92}X_2 + b_{93}X_3 + \ldots\ldots\ldots\ldots + b_{98}X_8 + b_{99}X_9 + e_9$ …Equation (ix)

where Y_8 denotes the multidimensional interpretation of technological risk (TRISK_VALCH_TOTAL) and Y_9 denotes the unidimensional interpretation of technological risk (TRISK_QUANTUM). X_1 to X_9 denote respondent experience, company origin, company customer, company operations, company age, sectors (services and technology), industry uncertainty and industry volatility. The *e*'s are the error terms. In order to control for age of company, we additionally introduced a categorical variable (CO_young).

The tolerance values for 9 independent variables ranged from 0.68 to 0.93, suggesting no issues of multicollinearity with the data. The data met the assumption of independent errors (Durbin-Watson value of 1.97 and 2.00 respectively). The normal probability plot of the residuals and the plot of standardized residuals showed that the data met the assumptions of homogeneity of variance and linearity in both the cases.

Table XVII: Antecedents of Technology Risk Interpretation

	Dependent Variable: Technological Risk Interpretation					
	Multi-dimensional Interpretation			Unidimensional Interpretation		
Independent Variables	β	t-value	*Sig*	β	t-value	*Sig*
Individual						
Experience	0.04	0.47	0.637	-0.03	-0.37	0.709
Organizational						
Origin (MNC)	0.28	3.39	0.001	-0.06	-0.77	0.445
Customer (B2B)	-0.17	-1.84	0.068	-0.01	-0.07	0.942
Operations (upstream)	-0.20	-2.25	0.026	-0.01	-0.11	0.914
Age (young)	-0.05	-0.64	0.522	-0.17	-2.09	0.039
Sector						
Services	0.02	0.23	0.821	-0.29	-3.21	0.002
Technology	0.01	0.06	0.954	-0.33	-3.50	0.001
Industry Uncertainty	0.09	1.17	0.242	0.15	1.99	0.048
Industry Volatility	0.09	1.14	0.258	0.27	3.73	0.000
Overall Model	F(9,132)=3.24, p =0.001 R^2=0.18			F (9,142)=3.09, p =0.002 R^2=0.16		

The results obtained from estimating Equations (viii) & (ix) are provided in Table XVII. The regression on overall people risk interpretation and

empowerment risk interpretation were significant: F (9,132) = 3.24, p=0.002; R^2 =0.181 and F(9,142) = 3.08, p=0.001; R^2 =0.164.

The results show a positive and significant effect of MNC companies (β =0.28, p <0.000), consumer-facing businesses (β =0.17, p <0.10) and companies operating downstream (β =0.20, p <0.05) on interpretations of the multidimensional nature of business risk. Thus, H_{9a}, H_{9b} & H_{9c} are supported.

Finally, we test for H_{10a} & H_{10b}, viz the effect of managerial experience on their assessment of organizational risk action, including the moderating influence of industry sector and the self-moderating effect of experience. This was tested by estimating the following regression equation:

$$Y_{10} = b_{10\text{-}1}X_1 + b_{10\text{-}2}X_2 + \ldots\ldots + b_{10\text{-}11}X_{10} + b_{10\text{-}12}X_{10} + e_{10}, \ldots \text{Equation (x)}$$

where, Y_{10} denotes the managerial assessment of organizational risk action (CHANGE_QUANTUM), X_1 to X_8 denote respondent experience, company origin, company customer, company operations, company age, sectors (services and technology), industry uncertainty & industry volatility and X_9 is the managerial interpretation of business risk (RISK_QUANTUM). X_{10} and X_{11} are the interaction variables between experience and the industry sectors (manufacturing & technology respectively), and X_{12} is the self-interaction of experience. The *e*'s are the error terms.

The tolerance values for 9 independent variables ranged from 0.71 to 0.95, suggesting no issues of multicollinearity with the data. The data met the

assumption of independent errors (Durbin-Watson value of 1.98). The normal probability plot of the residuals and the plot of standardized residuals showed that the data met the assumptions of homogeneity of variance and linearity in both the cases.

We carried out this analysis as a step-wise regression of Equation (x) and the results are provided in Table XVIII. The regression was significant at each step. Both the moderating effects, of industry sector [$F(2,161) = 2.71$, $p = 0.070$, $\Delta R^2 = 0.028$] as well as the self-moderation of experience [$F(1,160) = 5.87$, $p = .017$, $\Delta R^2 = 0.029$] were significant. The final regression model fit was as follows: $F(12,160) = 3.24$, $p < 0.001$, $R^2 = 0.195$.

Table XVIII: Moderated Effect of Managerial Experience on Assessment of Risk Action

	Dependent Variable: Assessment of Risk Action								
	No Moderator			Moderator: Industry Sector			Moderator: Managerial Experience		
Independent Variables	β	t-value	*Sig*	β	t-value	*Sig*	β	t-value	*Sig*
Individual									
Experience	-0.09	-1.26	0.209	-0.33	-2.45	0.015	-0.24	-1.79	0.076
Organizational									
Origin (MNC)	-0.05	-0.66	0.511	-0.03	-0.43	0.667	-0.04	-0.47	0.639
Customer (B2B)	-0.09	-1.01	0.316	-0.09	-1.00	0.318	-0.09	-1.04	0.300
Operations (upstream)	-0.02	-0.24	0.811	-0.03	-0.31	0.758	-0.03	-0.41	0.681
Sector									
Manufacturing	-0.03	-0.39	0.694	-0.06	-0.71	0.479	-0.08	-1.03	0.302
Technology	-0.05	-0.60	0.553	-0.06	-0.66	0.510	-0.07	-0.82	0.415
Industry Uncertainty	-0.09	-1.21	0.229	-0.09	-1.18	0.238	-0.08	-1.06	0.291
Industry Volatility	0.18	2.29	0.024	0.17	2.24	0.027	0.17	2.20	0.029
Overall Risk Interpretation	0.26	3.20	0.002	0.24	2.93	0.004	0.26	3.21	0.002
Interaction Variables									
Experience x Manufacturing				0.20	1.65	0.100	0.26	2.15	0.033
Experience x Technology				0.22	2.24	0.027	0.19	2.04	0.043
Experience x Experience							0.22	2.42	0.017
Interaction Effect				$F(2,161)=2.71$, $p=0.070$ $\triangle R^2=0.028$			$F(1,160)=5.86$, $p=0.017$ $\triangle R^2=0.029$		
Overall Model	$F(9,163)=2.89$, $p=0.003$ $R^2=0.14$			$F(11,161)=2.91$, $p=0.002$ $R^2=0.17$			$F(12,160)=3.24$, $p=0.000$ $R^2=0.20$		

The effect of managerial experience on their assessment of organizational risk action (though not significant by itself), is negative when considering the moderating role of industry sector (Step II: effective β for values for services, manufacturing and technology -0.33, -0.13 and -0.11 respectively). Thus, H_{10a}

is not supported. However, we observe that experience itself is positively self-moderated (Step III: interaction $\beta = 0.22$, $p < .05$). Thus, H_{10b} is supported.

An overview of the hypotheses, including those that were supported or not supported, is provided in Table XIX. We next discuss these results and the overall findings from the field survey.

Table XIX: Summary of Hypothesis Testing Results

Hypothesis	Effect	Effect	Support	Remarks
H_1	Business Risks: Latent Groups		Yes	Uncontrollable (envioronmental) and controllable (market-facing & organization-facing risks)
H_{2a}	Experience --> Business Risk	+	No/ Yes/ N.A.	Not supported for interpretations of overall business risk. Supported for market-facing risks. N.A. for organization-facing risks
H_{2b}	Moderation by Industry Sector on Experience --> Business Risk	+	Yes/ No	Supported for interpretations of overall business risk and market-facing risks. Not supported for organization-facing risks
H_3	MNC Managers --> Business Risk	+	Yes	Supported for interpretations of overall business risk, market-facing risks and organization-facing risks
H_4	Downstream Business --> Business Risk	+	No/ Yes	Not supported for interpretations of overall business risk. Supported for market-facing risks.
H_5	Industry Uncertainty --> Business Risks	+	Yes/ No	Supported for interpretations of overall business risk. Not supported for market-facing risks and organization-facing risks
H_6	Competitive Volatility --> Business Risks	+	Yes	Supported for interpretations of overall business risk and market-facing risks. Not supported for organization-facing risks.
H_7	People Risks: Latent Groups		Yes	Competence risk, empowerment risk and engagement risk
H_8	Experience --> People Risk	-	Yes/ No	Supported for interpretations of overall people risk. Not supported for any of the dimensions of people risks
H_{9a}	B2C Companies --> Technological Risk	+	Yes	Supported for multi-dimensional measure of technological risk. Not supported for unidimensional measure
H_{9b}	Downstream Business --> Business Risk	+	Yes	Supported for multi-dimensional measure of technological risk. Not supported for unidimensional measure
H_{9c}	MNC Managers --> Business Risk	+	Yes	Supported for multi-dimensional measure of technological risk. Not supported for unidimensional measure
H_{10a}	Experience --> Assessmentment	+	No	Not supported
H_{10b}	Moderation by Experience on Experience --> Assessmentment	+	Yes	Supported

N.A. : Could not be estimated due to model limitations (not significant)

7.3 Findings from Field Survey

The results from our field survey provide substantive new findings on managerial perceptions of business risk in general, as well as specific to certain facets, particularly people risk.

7.3.1 The Domain of Business Risk

Based on the prioritization amongst the different facets of business risk we found extreme divergence in management views regarding environmental risk and its criticality with almost equal number (one out of four) of respondents rating it as the most critical as well as the least critical risk. Instead, technological risk and customer-led risk appeared as key concerns for most businesses. It appears that criticality of competitive and employee-led risks could be contextual to the industry or firm. However, managers didn't appear to consider organizational or operational issues as risks. The disparity within managerial rankings of the seven facets of business risk suggests that these rankings could be influenced by the business context. On the other hand, there was much more alignment on managerial priorities within technological risk (primarily revolving around data-led insights and digital enablement).

We had hypothesized on the existence of latent groups within the seven facets of business risk. Consistent with our observations from the field interviews, as well as the divergence in prioritization as noticed in the field survey, our analysis showed that perceptions of environmental risk do not exhibit similar traits as other facets of risk. We believe that environmental risk, on account of being mostly uncontrollable, is outside the purview of regular risk management efforts. The remaining six facets formed two groups in terms of market-facing risk and organization-facing risk. The results suggest that management efforts need to be directed towards managing for both these types of risks. We discuss this in detail in the next section.

We analyzed the effect of managerial experience on interpretations of business risk and the results suggest a significant positive influence for market-facing risk. On considering the effect of industry sector, we observed a positive influence for both overall and market-facing risk. This effect appeared to vary by industry sector and was most pronounced in the case of technology, followed by services and manufacturing sectors. It appears that managerial experience plays a stronger role in fast-changing industries. However, we found no evidence of managerial experience effecting interpretations of organization-facing risk. Similarly, we did not find any effect of managerial experience on interpretations of technological risk. Our results show that the effect of managerial experience on risk interpretation is subject to the particular facet of risk.

We also analyzed the effect of organization characteristics on risk interpretation. The results validate our belief that MNC managers – because of their organizational exposure - are more sensitized to overall, market-facing as well as organization-facing risk interpretations. We also found that managers in companies operating downstream are more sensitized to overall business as well as market-facing risk. The results confirmed our view that managerial interpretations of risk are positively influenced by market uncertainty and competitive volatility.

Our results also showed a clear influence of organizational characteristics on the interpretations of technological risk. This, along with the comparative alignment in managerial prioritization within its facets, suggests that managers

perceive greater clarity and controllability of technological risk compared to certain other facets of business risk. Based on our analysis of the factors influencing technological risk, we could demonstrate that multidimensional considerations provide a more effective way to interpret risk signals, as suggested by our model.

We found little evidence of factors influencing organization-facing risk. It is likely that such factors exist beyond those that we considered in this research. These findings support our model which suggests that individual, organizational and industry variables influence managerial interpretations of business risk. The diversity in results confirms our belief that – unlike the extant view - such effects are not uniform and may differ dependent on the specific variable as well as the particular facet of business risk.

We also studied the effect of managerial experience on assessment of organizational risk action and the results point to an interesting phenomenon. Though by itself experience appeared to have a negative influence, we found a stronger positive self-moderating effect of experience on assessment of risk action. The relationship between managerial experience and their assessment of organizational risk action appeared to take the form of a forward-bending curve, signaling more experience leads to a greater assessment of change. It appears that with increasing experience the initial guarded approach from managers gives way to an over-commitment to their own paradigms. Our results signal a contradictory effect of managerial experience on assessment of organizational risk action, and we explore it further in the discussions section.

7.3.2 The Context of People Risk

From managerial prioritization between the ten aspects of people risk we found that almost half the respondents rated leadership, and a third rated customer centricity as major concerns for their organization. The results suggest that managers view these as the most critical aspects of people risk that they need to manage. Market intelligence and organization culture also appeared as critical considerations under management radar. On the other hand, and contrary to our impressions from the field interviews, most respondents did not view aspects of talent management, employee engagement and training & development (also decision making) as primary concerns. This could suggest that either managers did not consider them as critical or saw these as well managed and therefore not a risk. Interestingly, collaboration & partnership and risk taking did not appear as important considerations for the respondents.

Unlike the noticeable divergence in prioritization between the different facets of business risk, there was comparative alignment on the managerial prioritization of the different aspects of people risk (similar to aspects of technological risk). The congruence in responses could suggest that there is greater clarity (and consequent focus and control) on critical aspects of people risk. However, it could also suggest that certain aspects of people risk (as proposed by us) are not within regular management consideration.

We analyzed for the existence of latent groups within the ten aspects of people risk in order to validate the argument emerging from our field observations. The results suggest a three-dimensional representation of people risk from the

context of the organization and its interactions with people across its entire value network. The first dimension, competence risk, deals with the employees who constitute the organization. The second, empowerment risk, deals with the working of the employees within the context of the organization. The third dimension, engagement risk, provides a holistic look at how the organization engages with its extended group of stakeholders. The 3-dimensional representation of people risk provides a more insightful means of understanding the construct of people risk.

On reviewing managerial prioritization of the aspects of people risk in the context of the emergent 3-dimensional view, engagement risk appeared to be a primary concern for managers whereas competence risk seemed to be considered well controlled. There appears to be a contradiction between our observations from the field interviews and the findings from the survey, and we explore it in our discussions section.

Contrary to popular belief, our results showed negative influence of managerial experience in their interpretation of overall people risk. In fact, our results provided little insights into factor which influence the interpretations of different dimensions of people risk, though we noticed negative effect of industry sector (specifically services) across interpretations of overall people risk, employee risk and competence risk. It appears that people risk cannot be adequately interpreted through the individual, organizational and industry-level variables that we considered, and it is likely dependent on other factors outside the purview of this study.

We now integrate the findings from our field research as well as the executive survey to present a consolidated overview of business risk and contributions of this study.

8 Research Contributions

We had outlined the purpose of this paper towards developing our understanding of business risk in the managerial context, and our research makes substantial progress towards that effort.

Our research offers an alternate model to explain management of business risk which, emanating as it does from field insights, provides an ex-ante view of how managers deal with it. The emergent picture is of a construct with different facets, interconnected with each other and manifesting through multiple dimensions. Within this inherent complexity, our representation helps explain variances in managerial perspective of business risk.

We validate some of the unique characteristics of business risk through the construct of people risk and technological risk. We evaluate both managerial prioritization and interpretation in considering managerial perception of risk. Our approach helps develop an understanding of managerial perception and its influence on their subsequent actions.

Our findings are substantive in the domain of newer organization & industry variables and their effects on different forms of risk. We find that greater exposure to global systems as well as direct engagements with end-users influences interpretation of certain risks. Our results suggest industry uncertainty and competitive volatility improves sensitivity to risk signals, and

this is further emphasized with managers from fast-changing sectors (technology) demonstrating higher degree of risk interpretation.

We analyze the domain of technological risk to validate the proposed effect of organizational factors on the multidimensional interpretation of business risk. Our field interviews demonstrate the positive effect of a multidimensional perspective in managerial response to technological risk– from considering technology as a threat to leveraging it as a source of business advantage.

Our research explores risks related to people in a much broader context than previously considered and the results reconfirm our view regarding differing influences across different facets (and within those facets, different dimensions) of risk.

Our research suggests that managers see organizational capabilities as the antidote to business risk. They differ in terms of their risk management approach, and these differences occur both in terms of what they identify as essential for managing the risk, as well how they go about managing it. We also develop an understanding of the strategies adopted by managers in harnessing risk management capabilities.

Additionally, we identify four major contributions from our research which addresses current ambiguity in our knowledge while significantly enriching our understanding of business risk. We elaborate on each in this chapter.

8.1 The Duality of Business Risk

Our research identified the seven facets of business risk. We found a distinct difference in managerial perceptions of environmental risk, perhaps on account of its lack of controllability.

"Our reputation is a big risk: are we in the business of profiteering or are we in the business of caring & curing. Counterfeit is 'a perfect murder, a murder most foul'.. There is lack of IPR and high import duties"
Chairman & CEO (India) of a $12B pharma MNC

We found managers tend to have extreme views regarding the criticality of environmental risk to their business. These views not only effect their management of environmental risk but at times appear to influence (cloud?) their perceptions of the criticality of other facets of risk as well as their choice of risk management strategies. Despite the inherent variances across the other facets of business risk, we found certain similarities in managerial approach when we look at the facets from the lens of market-facing and organization-facing risk.

"The retailer's biggest risk is store productivity. It is a variable depending upon many things, including economic climate. What's in your control is the brand & product. As long as they are done right, we have to depend on the economy and the factors that are affecting sales. Ultimately productivity is dependent on consumption. All things circle around that."
MD & CEO of a $400M publicly held Indian fashion retail company

Senior managers tend to treat market-facing risk as top priority and they appear to be biased in terms of their focus on addressing these facets. Managerial interpretations of market-facing risk are significantly influenced by individual, organization and industry variables. We found that the same factors do not influence managerial interpretations of organization-facing risk. In fact, organization-facing risks do not appear to be a priority for most managers, and

it raises doubts whether they even perceive such risks as critical in the context of their business.

It is likely that there could be other facets within organization-facing risk as well as variables influencing such risks which we did not consider in our study. However, given the interconnected nature of business risk, the management of market-facing risk can be impacted by the unforeseen impact of organization-facing risk. Our research highlights the disconnect between managerial approach towards market-facing risk and organization-facing risk.

8.2 The Contradictions of People Risk

We identified ten aspects of people risk which further form into a three-dimensional representation of people risk (Figure XII).

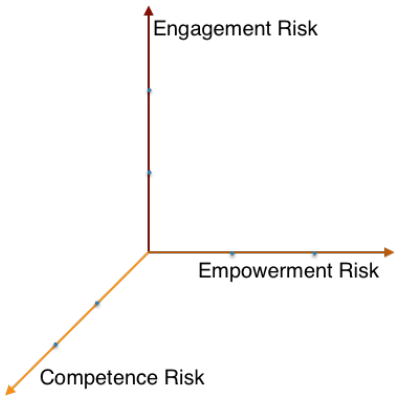


Figure XII: Three Dimensional Perspective of People Risk

Our research exposed a difference between the views of senior executives (whom we interviewed) and those of managers (from our survey) on the primary people related risk impacting their organizations.

"As leaders we are the hunting ground for talent. As the market evolves, and bigger/ newer players come in, our talent risk increases.."
CEO of a $2B Indian conglomerate in foods, fashion & retail

"Because it is a nascent industry, you do not have readymade talent. Talent is something we need to start developing because it is not readily available. It's not that people are not available but you don't get the people with the right talent for you. That's the challenge."
MD & CEO of a $400M publicly held Indian fashion retail company

Whereas most interviewees emphasized the competence risk dimension (particularly talent management), the majority of survey respondents prioritized aspects of engagement risk (particularly leadership and organizational culture) as the biggest challenge within people risk. In fact, the aspects of competence risk did not appear as a top priority in our research.

Herb Kelleher, the former Chairman and CEO of Southwest Airlines famously said, *"The business of business is people; yesterday, today and forever"*[18]. Nowhere is this statement more amplified than from our research, where we noticed the people factor manifesting itself across each and every facet of business risk.

"Feeling valued in a company is extremely important…. beyond money, beyond career… This is the risk companies like us need to seriously look at…"
CHRO of $2B Indian conglomerate in foods, fashion & retail

"If a person is committed and if he is hooked to the philosophy of the brand, then you can teach him the rest."
Founder & CEO of a fresh-foods start-up

We noticed comparatively lesser references to aspects of engagement risk during our conversations with executives. Our findings also appear to suggest that managers tend to have a narrower (at times, even mis-leading view) of the

[18] HSMAmericas. (2008, October 14). *Business of Business is People: Herb Kelleher*. Retrieved from http://www.youtube.com/watch?v=oxTFA1kh1m8.

people challenges facing their organization, and this could likely affect their management of people related issues. In fact, we found that most managers don't even consider certain capabilities as critical (collaboration & partnership and training & development) in their efforts to manage people risk.

Unlike in the case of overall business risk and particularly market-facing risk, we did not find any significant effect of organizational and industry-level factors on interpretations of people related risk which further aggravates the challenge. In fact, we found that managerial experience has a negative effect on their interpretations of people risk (partly explaining the contradiction in managerial prioritization).

The contradictions within people risk, both in terms of its influences as well as in its prioritization, suggests that management of people risk is comparatively more challenging than the overt market-facing aspects of business risk. However, management of business risk may remain unsuccessful if the concurrent and underlying influence of people risk is not addressed.

8.3 The Experience Paradox

The relationship between managerial experience and risk taking has been a topic of frequent research, and the findings have been contradictory. Certain scholars have suggested that an understanding and knowledge of problems provides solution routines and heuristics to use in choosing among risk alternatives, thereby leading to a positive effect of managerial experience on risk taking

(Funk, Rapoport & Jones, 1979; Baird & Thomas, 1985). However, Vroom & Pahl (1971) through a test amongst 1,484 managers over 200 companies and found a significant negative relationship - which was *"relatively stable across items and companies"* - between managerial experience and risk taking. The subject continues to be extensively studied, particularly in the context of fund managers, with similar contradiction in results. Menkhoff, Schmidt & Brozynski (2006) reaffirm the ambiguity in the relationship between managerial experience and risk taking and ascribe it to the heterogeneity in the definition of risk taking.

Our research too found varied effects of managerial experience in the interpretation of different facets of business risk. Whereas, managerial experience showed a positive effect in interpretations of overall business risk (particularly market-facing risk), it had a negative effect in the interpretation of overall people risk and no effect on the interpretations of technological risk. Moreover, managerial experience even showed an increasing 'forward-bending' effect on their assessments of risk actions. The results suggest that the nature of the relationship between managerial experience and their interpretations of risk is not uniform and subject to the specific facet of risk being studied, and we call this phenomenon as **the experience paradox**.

"People who tend to work in the same industry in the business for a very long time there is sometime a human tendency to say that I know what it takes.
And sometimes that may blunt our capability to sharpen our key actions that we need to take as far as the whole customer service is concerned."
CHRO of $2B Indian conglomerate in foods, fashion & retail

Experience indeed helps in gauging risk and increasing experience is conducive to accumulation of knowledge and power, thereby increasing and refining risk perceptibility. On the other hand, experience also appears to suppress the ability of managers to gauge certain facets of risk. This was somewhat illustrated in the apparent contradiction between executive and managerial prioritization of aspects of people risk.

We found greater effect of experience in risk interpretation in technology companies and lesser effect in manufacturing companies. It appears that experience also leads to a commitment to established paradigms which can become a deterrent over time, and thus managers in fast-paced industries - through their exposure to changing paradigms - are better sensitized to risk signals.

We are thus able to explain the contradictions between the findings in extant literature as not arising due to the heterogeneity in definition of risk taking but due to the apparent heterogeneity in the context in which the risk was being studied. The experience paradox has implications for executives responsible for risk management in their organizations.

8.4 The Cognition of Business Risk

Extant literature has focused on business risk in the context of its predictability (Knight, 1921/ 2006), incidence (Amit & Wernerfelt, 1990) or its controllability (Kaplan & Mikes, 2012). Our research points towards another consideration

which impacts the management of business risk. We earlier discussed the apparent de-prioritization by managers of organization-facing risk. Similarly, the engagement dimension of people risk received limited attention in our conversation with senior executives though managers considered it most critical in their prioritization of aspects of people risk. These are both instances of business risk which though well within managerial control, does not appear to be in managerial consideration.

Throughout the different stages of our research we found similar gaps in managerial considerations of facets of business risk, and within facets of particular dimensions of the facet. This apparent dissonance in considerations of certain dimensions and facets of business risks suggests the existence of managerial **blind-spots** in the perception of business risk.

Managerial prioritization and interpretation of risk is dependent on various factors including past experiences, current awareness and existing knowledge. In the complex maze that is business risk, it is easy to miss some parts. Consequently, even though the risk might be eminently manageable, it might go unattended. We call this **the cognizance of business risk**, and the findings from our research emphasize the important of risk cognition in the management of business risk.

9 Implications and Directions

9.1 Managerial Implications

"The biggest risk is not taking any risk. In a world that's changing really quickly, the only strategy that is guaranteed to fail is not taking risks."
(Thiel, 2004)[19]

Business is all about dealing with risk which is like Janus, the two-faced Roman god of yore. Just like all forms of transition came within his purview – beginnings and endings, entrances and exits, and war and peace – risk can either be the cesspool from which there is no escape, or the beacon to a new opportunity. Risk need not be undesirable, in fact it can be highly beneficial. Indeed, risk and capability are two sides of the same coin and it really boils down to what the organization wants to and focuses on as its obverse side.

Often business risks appear to be innocuous. Unfortunately, often the initial impressions of risk are also just the tip of the iceberg. Risk in its most strident form is the one which remains most hidden till it becomes too late. In the complex maze that is business risk, it is easy to miss some parts. The chances are high since managerial experience tends to behave paradoxically when it comes to both risk perception and its management. Whereas the treatment might be obvious, there are aspects which might fall into managerial blind-spots.

[19] Elkins, K (2016, August 26). *Mark Zuckerberg shares the best piece of advice Peter Thiel ever gave him.* Retrieved from http://www.cnbc.com

Throughout our research we observed that strategic risks are not episodic in nature. However we find that both academia and business have primarily focused on the risk symptoms. We recommend the need to move away from the symptomatic treatment of risk to dealing with risk on a systematic approach.

"We no longer have the luxury of taking 12 months to create a product and put it in the store…our ability to quickly change, track something that is not working, create new & fresh products more frequently in a year and put it in the store and keep killing products that don't work faster and quicker is very important.. because that is going to be killer point."

CEO of a $2B Indian conglomerate in foods, fashion & retail

Dealing with risk involves dealing with volatility, unpredictability and uncertainty, and risk management is essentially management of change. It is the acknowledgement of the fact that there is a change in circumstance and requires the ability to interpret the situation without bias and then take action. Through our research as well as in the context of topical business events, we have observed managers who are adept at acknowledging change. However, often we find they tend to fit the change into their frame of reference and as such their efforts to mitigate it tend to be biased. Our study highlights the need to broaden organizational cognition to newer possibilities whilst planning their risk management efforts. It might delay the efforts somewhat, but business is not a 100-yard sprint and the need is to run the marathon.

Our research calls out the need to look at risk not just from the market-facing side but also from the organization-facing side. In Roman mythology, Janus was also referred to as the god of choices and his two faces, with one looking outside the gates of the city and the other inside, helped make the right choices and transitions. In the context of risk too, there is a need to look both at both the market & organization-facing aspects of risk to ensure that it is managed.

We notice the inside view often gets missed in the zeal to engage on the outside. However, it's the organization-facing aspects which often make the difference in successful management of market-facing risk.

"...mindset across the organization? It's a big issue... you develop a tool, but you also develop this thing called behaviour, because of which you don't see your investment change. People will not use the sales force automation, your customers will not change, your suppliers will say 'Why do I have to do it? seems additional work'... Mindset for me is the biggest organizational risk."
CFO of a $2B Indian conglomerate in foods, fashion & retail

Managing risk boils and change involves people. We cannot overemphasize the people aspect of dealing with risk, and therefore change since the best of risk management strategies can fail if the people aspects are not considered. Our research identified the three domains of people risk and organizations need to engage and invest on each of them.

"We are not the best in neural networks but we partner with someone who is great, use their plugins into our product which then provides the solution for the business. We are clear we don't want to invest in areas of technology that someone else has greater expertise. 3 years back we were buying complete products, today we are looking at slivers of technology which we can imbed in our solution..
so it's a slightly more nuanced view which allows us to be more effective. "
Global COO of a $200M legal processing outfit

Finally, it boils down to harnessing of capabilities and risk management strategies will work only through the joint application of capabilities from the outside, while developing them inside. This requires investment and focus in terms of both collaborations & partnership as well as real-time training & development. Both these areas need greater prioritization than present.

In today's world, risk is inevitable. It's for the organization to decide whether they will manage it or be managed by it. Managers could use our exploration

of people risk and its different aspects to periodically review their organizational efforts and status in this space.

Contrary to the current approach which tries to lay out a panacea for risk management, we believe there cannot be a single solution to strategically address business risk. When the facets of risk behave differently - at different times, in different contexts and with different dimensions and interconnections – a 'magic mantra' is unlikely to work. We believe that efforts to develop a single framework for managing risk will be limited in its application. We don't provide a magic framework. Instead, in the next chapter we share the **risk management landscape** and suggest that managers use a systematic approach for dealing with risk in the context of their organization We take the liberty to juxtapose the findings from our research in the context of topical business events and detail the approach towards managing business risk and leveraging it for business advantage.

We shared the major findings and implications arising from our study with a few senior executives we had interviewed during the first phase of our research. Their experiences in managing business risk during the intervening period tends to validate some of the implications outlined above. We provide a few snippets in the epilogue of this paper.

9.2 Theoretical Implications

In our literature review we found three limitations of prior research on risk: dearth of studies on managerial perspectives of risk in general and business risk in particular; knowledge gap of managerial perceptions of risk and its controllability; and limited understanding around the role of perceptions in approach towards risk management. In this paper, we have used our review of literature and our field observations to structure inquiry into how managers classify, prioritize, interpret and therefore respond to business risk.

We draw on both prior research as well as the findings from our field interviews to develop a curative understanding of management of business risk. Our approach brings into focus the nature of business risk, the combined effect of risk prioritization and risk interpretations into understanding managerial perceptions, and also relates that with executive actions to manage those risks. Given the exploratory nature of this study, we refrain from providing definitive predictions and instead explore the possible linkages and contradictions while also generating opportunities for further research.

This study offers three new and important implications for academic inquiries in the domain of business risk. First, we look at business risk as seen by managers and not in the context of its definition and scope in extant literature. We therefore provide an alternate, managerial perspective of business risk, significantly different from how it has been conceptualized till date. Second, previous studies have focused on providing a behavioural explanation of managerial risk perception. We adopt a different approach recognizing

perception as including both prioritization and interpretation, thereby allowing for the contextualizing of risk perception and its linkages with individual, organizational and industry variables. Third, earlier research has taken a near dichotomized or at best linear view of risk action. We instead outline the dual role of capability identification and its development in defining risk action. Additionally, unlike the extant approach of measuring risk outcomes in terms of probabilities and income variances, we argue for the measure of such outcomes through changes in business parameters as desired by managers.

These combined implications are both new and important additions to existing literature as it complements existing findings while allowing for further theoretical insights to be derived from our typology in future studies on business risk.

10 A Systematic Approach to Leverage Business Risk

India's leading private airline for more than two decades, Jet Airways, recently announced total shutdown of operations. In the past year even as its business grew 38%, Facebook's troubles appeared to grow even faster. Just about a decade ago, General Motors suffered one of history's largest bankruptcies. Jet Airways, Facebook, General Motors and countless other organizations add to the growing list of heavyweights who either succumb or suffer grievous injury while navigating through the challenges of business.

Managing business risk usually turns out to be more challenging than foreseen, as these firms found to their misfortune. However, successful organizations are also able to convert certain situations towards their advantage. In this chapter we present a systematic approach to help managers visualize business risk, identify ways to manage them, develop strategies to leverage particular risks and execute on these strategies for business advantage.

10.1 Refining the Domain of Risk Management

Analysts have identified multiple reasons for Jet Airway's debacle. The company had been courting investors for many months but failed to close a deal since most investors were seeking greater control. Stories abound regarding the founders' unwillingness to let the professional management team take charge. The airline remained saddled with a confused fleet of assets - both wide-bodied Boeings and short-haul ATRs - causing serious operational problems. Closer inspection of its business model highlights the contradictions of managing a

full-service airline in a highly competitive market. To top it all was the tsunami of external factors like increasing fuel price, weakening exchange rate and subdued economic growth[20].

Kaplan and Mikes (2012) classify risks into three categories – preventable, strategic and external – and suggest that risk management strategies should be based on the organization's ability to control for the risk. Their work as well as the efforts of most scholars and consultants in the field of risk management focusses on the controllability of risk episodes. However, as is obvious, Jet's fate cannot be ascribed to any single episode or risk event. Based on our personal experiences and through countless discussions with business leaders, we realized that the most challenging business risks seldom flow from a single event or series of events but instead are the result of numerous negative factors working in conjunction. Therefore, we recommend shifting the discourse of risk management from its current episodic form to a more systematic approach.

From our interviews of senior executives, we identified 7 different facets of business which also represent its main sources of risk. These are environmental, competitive, customer-led, technological, operational, employee-led and organizational risks (Figure III). Till recently, Jet Airways was credited for its superior operational and organizational capabilities, running one of the most extensive air networks in India whilst also collecting accolades for world-class customer-service. However, much of Jet Airways' woes can be also be ascribed

[20] Chowdhury, A. & Mishra, M. (2019, Apr 22). *The rise and fall of India's oldest private airline.* Retrieved from http://economictimes.indiatimes.com

to its operational and organizational challenges, supposedly areas of recognized strength!

In the case of Jet Airways whereas its fleet strength & network was a source of competitive advantage, its fleet management was sub-par. Similarly, even though Jet's crew was renowned for exemplary service, the senior management team lacked empowerment. This apparent anomaly in not unique to Jet Airways and emerges from the inherent multidimensionality of business risk.

In our survey of 182 senior executives, we found that even when managers consider a particular source of risk as critical to their business, they do not treat all its dimensions in the same way. Often, some dimensions may not even be in their consideration. Their treatment of the different dimensions is based on multiple factors like existing knowledge, past experience and predictability of its occurrence. We call this as **the cognizance of business risk**.

The controlling-for-risk outlook presumes that the risk is in the management radar. However, our studies establish a clear role of risk cognizance in effectively dealing with business risk. We thus propose that risk management should focus not just on the controllability of risk, but also on its cognition.

10.2 Introducing the Risk Management Landscape

We depict the role of both controllability and cognition in the management of business risk, through **the risk management landscape** (Figure XIII), which

characterizes risk management along the two as axes. Although each dimension exists on a continuum, together they suggest four zones of risk management.

Figure XIII: The Risk Management Landscape

Impact Zone: Such facets of business which are within an organizations' cognition and control, reside in its impact zone. Here, the firm can treat them as assets and not risks, using them for business advantage. A firm should try to expand its impact zone by moving either its control line to the right or the cognition line upwards, or both.

By actively engaging with its Chinese suppliers, Micromax was able to introduce mobile phones with advanced designs and newer technologies into the Indian market much ahead of its competition. It shifted its control line to include its suppliers and thereby it brought in the extended business operations within its impact zone.

Battle Zone: Those facets of business which are within its cognition but outside its control, fall in the battle zone. The firm needs to be proactive here and

address the risk as it emerges. It calls for preparedness with clear battle tactics, including trying them out in limited scale. A typical strategy for the battle zone would involve controlled aggression, while building one's defenses. In the long-term, through effective engagement the organization may succeed in shifting its control line to the right, thereby shrinking its battle zone and expanding its impact zone.

Blind Zone: Such facets of business which are within an organizations' control but outside of its cognition fall into its blind zone. How did General Motors - one of the world's largest companies - fall into one of history's largest bankruptcies? It failed to recognize changing customer needs, blatantly ignored competition efforts and didn't invest in new technologies. GM's dwindling cognizance rendered otherwise well managed facets of customer risk, competitive risk and technology risk into its blind zone.

Though the blind zone should be the easiest to address, General Motors' fate also illustrates how it can be impossible to get out off. The challenge in the blind zone is more ignorance than inability and the need is to invest in terms of continuous building of knowledge, insights and skills to take appropriate action towards risk management.

Unlike General Motors, by continuously investment in consumer understanding, Unilever has remained aware of the growing concerns around sustainability. These insights helped it develop a detergent using less water, which it launched recently. Similarly, PepsiCo has stayed aware of changing

consumer preferences, which influenced it to invest behind organic Gatorade, probiotic health drinks and lowered sugar and salt in its products to make its portfolio healthier. Through their continued investments towards consumer understanding, both these companies developed deep insights with led to these initiatives targeted at the growing base of conscious consumers. Unilever and PepsiCo's approach not only helps them mitigate consumer risk but is also expected to generate a much faster growth in the coming years.

Defenseless Zone: Those facets of business which are both outside an organizations' cognition and its control fall into its zone of defenselessness. Environmental risk, which includes economic, political, legislative, social and other extraneous facets affecting business adversely, falls in this zone. This is also the most difficult zone since it is arduous to move across both the control and cognition line at the same time. Google and Facebook's recent experiences provide a contrasting picture of risk mitigation in this zone.

Consumers and therefore governments world over have become more sensitive to privacy and more demanding of data protection, directly affecting the social networks business model. In this milieu, Google and Facebook adopted opposing strategies towards risk mitigation. Facebook's initial attempts to either deny or brazen it out, led to several lawsuits, legislative and regulatory hearings and forced the social media giant to issue multiple apologies severely harming its image and raising doubts about its intent. Google though facing similar fire, has been investing heavily to dial up the privacy protection tools in

their offerings, while proactively engaging with governments and consumer bodies world-wide to drive consensus on the future roadmap.

Facebook's tried to *'fight or flight'*[21], which is the typical kneejerk reaction to a defenseless situation. It seldom works. On the other hand, recognizing its defenselessness Google could take a mature response and invest in building future defenses.

Organizations dealing with business facets in the defenseless zone, should recognize that they are likely to be caught unawares, and their first reaction may not be the best. Building awareness and understanding of this space while simultaneously investing towards sustained influence and mitigation efforts is a more prudent approach.

Table XX: Strategic Approach across Four Zones of the Risk Management Landscape

Zone	Characteristics		Risk Management Objective	Risk Mitigation Strategy	What typically falls here?
	Control	Cognition			
Impact Zone	High	High	Treat as an asset not risk	Translate into business advantage	Operations Employees
Battle Zone	Low	High	Improve ability to control	Constantly test waters e.g., occasional skirmishes. Build deterrents	Competition
Blind Zone	High	Low	Build knowledge & skills	Invest to learn more. Try conversion to Impact Zone	Technology
Defenseless Zone	Low	Low	Avoid 'fight or flight' response	Ask forgiveness. Make genuine amends.	Environment

The risk management landscape described above lays emphasis on the risk facets themselves and suggests strategies for dealing with them across the four

[21] A phrase used to describe the physiological reaction that occurs in response to a perceived harmful event, attack, or threat to survival.
From Cannon, W.B. (1939). *The wisdom of the body* (2nd ed.). Oxford, UK: Norton & Co.

zones. Table XX provides a summary guidance to drive organizational efforts towards risk management.

10.3 Applying the Risk Management Landscape

Our research included executives from manufacturing, services and technology sectors. We observed that the typical risk management landscape differed across sectors, and the location of specific risk facets was often contingent to the sector itself. For example, technology would fall into the impact zone for new-age businesses, whereas it could be housed in the blind zone for a traditional manufacturing business. We demonstrate this through Figure XIV which provides only a representative illustration in the context of the manufacturing sector.

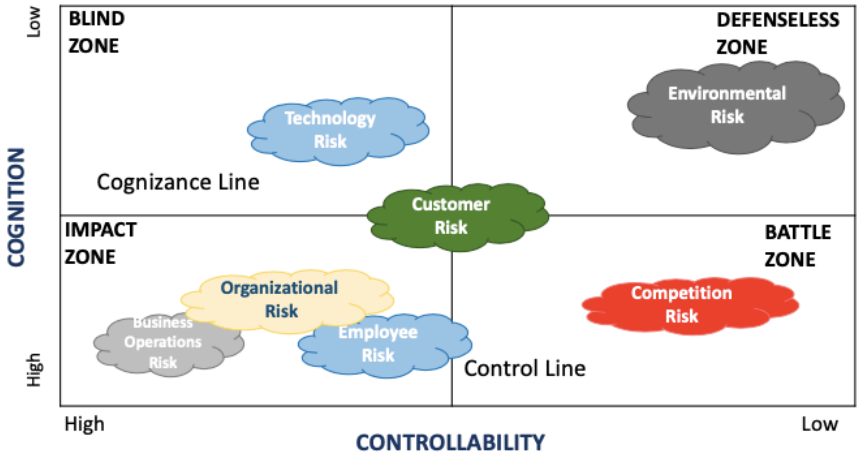


Figure XIV: Typical Manufacturing Risk Management Landscape

We specifically noticed that higher performing companies tend to differ from their industry counterparts in how they deal with different risk facets and in their

strategies (as suggested in Table XX) to include industry risk facets into their impact zone.

Unilever & PepsiCo through sustained investments on developing consumer insights, are able to influence customer decisions and translate this risk facet into a business asset. Similarly, Nike through sustained investments and innovation considers technology, not as a source of risk, but as a business asset. Figure XV provides a graphic illustration of how Nike, PepsiCo and Unilever's risk management landscape differs compared to their competitors, and how their management of these assets provides them significant business advantage.

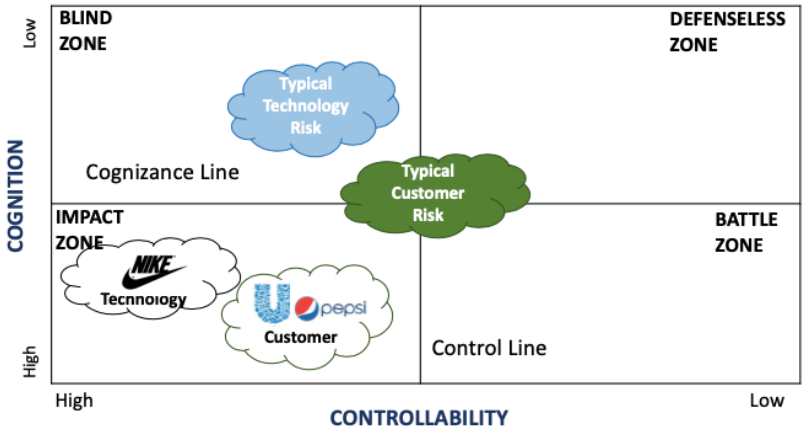


Figure XV: Lessons from Nike, Unilever & Pepsi

In fact, risk facets can be leveraged even when they don't fall into the impact zone. We illustrate this further in the context of the Technology industry. Many new-age companies end up building unique business models, often operating in undefined territory, and thus facing greater environmental risk. We earlier referenced Google and Facebook's handling of privacy and data protection, where Facebook reacted arrogantly (*fight or flight*) whilst Google through its

sustained efforts at influencing, managed to mitigate this environmental risk to some extent.

Similarly, both Airbnb and Uber as the proponents of the sharing economy, have been facing enormous local backlash. Whereas Airbnb managed it with active engagement of all stakeholders to showcase the overall benefits of their model, Uber through an aggressive battle-oriented approach ended up burning bridges with multiple stakeholders. It was only with a change of management, proactive reach-out, new company policies and sustained influence efforts that it has managed to extricate itself from that position.

Figure XVI provides a spotlight into how these companies dealt with the environmental risk navigating across the defenseless zone. The difference in Google, Facebook, Airbnb and Uber's management of environmental risk provides a lesson on the role of effective strategy, not just in dealing with but leveraging risk facets towards business advantage.

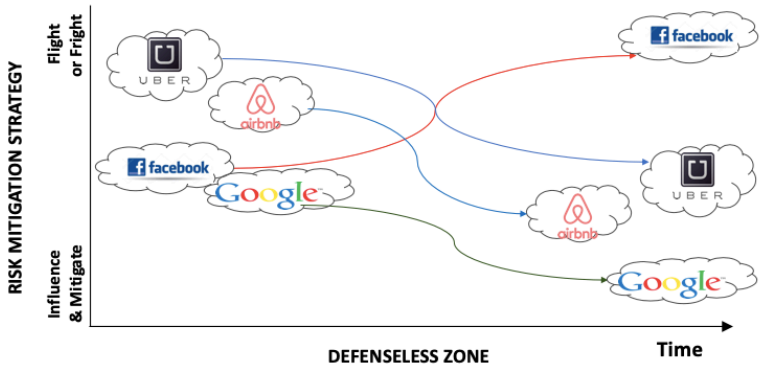


Figure XVI: The Technology Sector's Management of Environmental Risk

It is the industry characteristics which define the position of different risk facets in the risk management landscape, but it is the organizational approach, efforts and overall strategy which finally establishes its ability to manage and leverage risks. Reviewing the experiences of these companies on the risk management landscape shows the advantage of using this framework to simplify the process whilst converting the risk mitigation approach into one of dealing with risk for business advantage.

10.4 Dealing with the Interconnectedness of Business Risk

We started by stating that risk management needed to be more systematic, in lieu of its current episodic approach. As we explored further, it became apparent that the major business risks are the outcome of multiple negative events working in conjunction. These are the *'crash of grey rhinos'*[22], a metaphor for the fact that most of the specific events in isolation are avoidable, but not enough attention is paid to them till they together develop into a catastrophic '*black sawn'*. The grey rhinos preceding Jet Airways' debacle and General Motors' bankruptcy, and in many of the other examples that we shared illustrate the same point.

The seven facets of business risk often operate in groups. However, there is a common component across each of these facets, and it deals with people. Managing for any risk involves managing through people. In fact, a business

[22] *"Behind every black sawn is a crash of grey rhinos"*.
From Wucker, M. (2016). *The gray rhino: How to recognize and act on the obvious dangers we ignore*. New York, NY: Macmillan.

deals with people right across its value network, starting with its internal employees, extending to its partners, collaborators, stake-holders and influencers right till the end-users. Whereas machines and robots can be easily managed, reprogrammed or upgraded, managing through people throws its own challenges.

Our research emphasized that people-related risks form one of the biggest challenges facing businesses. We explored the dimensions of people risk and executives differed significantly in their cognition of these dimensions. Based on our field interviews and subsequent survey, we identified *three broad dimensions of people risks – competence risk, empowerment risk and engagement risk*.

- Competence risk deals with employees
- Empowerment risk deals with their working within the context of the organization, while
- Engagement risk covers how an organization is engaging with all its stake-holders.

Our research identified people-related capabilities as critical for the success of service and technology sector companies. However, companies differ in their handling of these capabilities. For illustration we can go back to the Google and Facebook example, and Figure XVII illustrates Google and Facebook's management of people related risks.

Both companies boast of high-end people competence. However (as their handling of the data protection and privacy challenge shows) they differ significantly in terms of addressing the engagement risk. Unfortunately, Facebook's bag of woes didn't end with the public snafu. Not only did it fail

miserably in terms of engaging with external stakeholders, the company has also seen employees coming out strongly against its privacy policies (or rather lack of it), leading to a spate of high-level resignations. On the other hand, Google has not only been more engaged with the external stakeholders but through open communication and empowerment, also harnessed the power of its employees to make significant progress towards enhancing its privacy and data protection policies & tools.

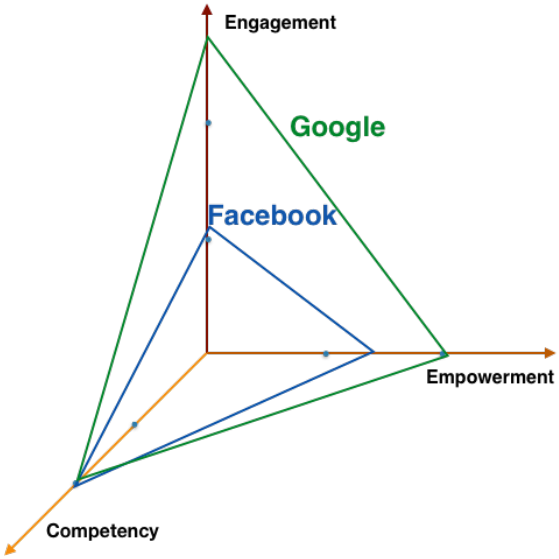


Figure XVII: Google and Facebook on the Dimensions of People Risk

India has been experiencing a massive e-commerce boom due to an increasing penetration of smartphones and broadband connectivity. During our research we found that many of the incumbent businesses tried to build their own e-commerce engines to reach out to customers. However, most of them were found wanting in terms of reorienting their legacy systems and approach in engaging with their vendors and partners. Their episodic efforts to deal with the technological impact of ecommerce was bound to fail and many of these reactive ecommerce sites have either wound up or dialed down operations.

Similarly, while companies have tried to adopt social media to engage with customers, they have been far more muted in using social media for engaging with their employees and other stake-holders. Consequently, many of the social media handles of companies have become promotional outlets or mere extensions of their customer help-desk.

In a sector where people are rated as a company's strongest asset, despite having the best of capabilities, Facebook appears to be in a serious bind. Not only does it adversely impact Facebook with respect to employee risk, customer risk and environmental risk it may end up impacting the company's efforts towards risk management across all other facets.

For Facebook and every other company facing business risk, a multidimensional approach to dealing with it can help them not just in effective risk mitigation but actually converting these risks into engines of business advantage.

10.5 The Systematic Approach

Based on the risk management landscape introduced earlier, we suggest the systematic approach towards leveraging risk for business advantage. It involves six steps as outlined in Table XXI.

Table XXI: A Systematic Approach to Managing Business Risk

1. Recognize the two axes of risk management – cognition and control. Use these axes to map the seven facets of risk on the risk management landscape, in the context of your organization.

2. While you are mapping ask yourself two questions :
   - How well do we understand the risk facet?
   - In case we understand it well, are we in a position to control it?

3. Identify the zone of incidence for each for each risk facet. Compare the position of your risk facets in the context of your industry map. As an organization you might have already taken some steps which allow you to use the risk to your advantage. Alternatively, you might find that you could be at a disadvantage on certain risk assets.

4. Develop your strategies for managing each risk facet (Refer Table XX). Recognize that the strategy to manage a risk facet will depend upon the zone in which it lies:
   - If it falls in your impact zone, review whether you are using it for business advantage. If you are, plan to enhance your impact on that facet. If you are not, plan investments to build it as an asset.
   - If it falls into your blind zone, evaluate your plans for knowledge and skills build up so that it moves into your impact zone.
   - If it falls in your battle zone, test the waters with a little bit of skirmish and see the reactions. Keep your battle tactics ready, since you will have little time to react when the risk does manifest itself.
   - If it falls in the defenceless zone, you need to recognise that you will be caught unawares and your first reaction may not be the best. Avoid 'fight and flight', plan for sustained influence and mitigation.

5. Recognize and evaluate yourself on the three dimensions of people risk. Evaluate each of the dimensions independently and in the context of the seven different facets of risk. Identify the dimensions where you need to invest.

6. Ensure adequate investments towards each of your identified strategies.

Through this chapter, we shared some highlights of our research and juxtaposed it with topical business events to introduce the risk management landscape as an aid to managing the seven facets of business risk and leveraging them for business advantage. We emphasize the need for a systematic (not episodic) approach to risk management. Our research highlights the role of risk cognizance, and we recommend that risk management should focus on cognition as well as controllability of risk. The importance of both these dimensions is depicted through the risk management landscape, and we provide strategic guidance towards managing facets of business risk across the different zones, viz impact zone, battle zone, blind zone and the defenseless zone.

The risk management landscape is amenable for deployment across different sectors and companies and for different facets of risk. Building from topical business case studies and our research findings, we deal with the interconnectedness of different facets of business risk and also across the different dimensions of people risk. Lastly, we outline the methodology as a ready reference for managers to implement it within their organizations.

We believe that if done proactively, organizations can use our approach to remodel business risks into effective engines of business advantage.

11 Limitations and Research Directions

Our research is an effort towards initiating a curative approach to the discourse of business risk. Given the exploratory nature of our study, the primary objective of this research has been theory extension rather than theory testing. Consequently, the study has inbuilt limitations.

At the outset, there is a need to refine the constructs defined in this research and much work remains to be done in terms of developing appropriate measures for each of the constructs. Our research also falls short of identifying influencers to the constructs of organization-facing risk and specific dimensions of people risk. There is an exciting opportunity to establish the linkages between the rich body of work in behavioural sciences and our approach by particularly diving into the context of these constructs.

Though we establish the role of managerial prioritization as well as managerial interpretation, our study falls short in terms of exploring the interactions within the two and in the development of an integrated measure of risk perception. Future research on business risk should be able to further explore the interactions and establish appropriate relationships.

There is an opportunity to develop a series of propositions emerging from our proposed framework (beyond the ten elaborated in this research), in the spirit of propositional inventories as developed in diverse fields (Kohli & Jaworski, 1990; Tuli, Kohli & Bharadwaj, 2007; Challagalla, Murtha & Jaworski, 2014) and much work remains to be done in empirical testing of those propositions.

We have taken certain scientific liberties in the interest of pushing the boundaries of theory. Needless to state, a significance value of $p<.1$ can cause much consternation. In our defence we would like to reaffirm the objective of this study was not to prove the degree of effect but to establish its possibility. Hopefully, our research lays the ground for more rigorous exploration in the future.

Our survey measured not just risk prioritization and interpretation but also risk management efforts and outcomes, yielding the measures susceptible to common methods bias (MacKenzie & Podsakoff, 2012). We acknowledge the limitation as one of the challenges of exploratory research and expect that future efforts will be able to look at the different stages of the risk management process in more rigorous manner.

In addition, several fertile avenues exist for future studies on risk management and desired outcomes, which could not be covered through the current field research. There is also an opportunity to advance this research through the discovery of newer variables and their effect on risk perspectives. Similarly, the proposed framework may be tested in the context of problem variables (which were ignored in this study) or in specific environment, industry or organizational contexts. Given the critical importance of business risk to managers, each of them will prove to be a fruitful field of strategic inquiry.

Our research focused primarily on India. Additional research should explore if the proposed model is generalizable across different societies, and it may lead

to developing a conceptualization that investigates the effect of specific environmental variables to particular facets of business risk. Similarly, generalizable facets of business risk that vary across societies could be identified and then propositions developed that relate specific variables to these facets of business risk. Even in societies at similar levels of economic development, firms may approach markets in different ways, and variances in risk interpretation may be due to such market-facing factors.

12 In Conclusion

"A ship in harbor is safe, but that is not what ships are built for."
(Shedd, 1928) [23]

Business risk is of critical focus for managers and an important research theme amongst academics. However there has remained a gap in their respective conceptualization and understanding of this field. Our study draws on field research of managers to provide a curative understanding of business risk, which we then validate through a field survey. Our research contributions has the potential to guide managers and researchers alike as they navigate through maze of business risk. We have been able to elaborate on several issues of managerial importance, while identifying several research issues that still need investigation. We hope that this study provides both a reference for managerial actions and an impetus for further research on the subject.

[23] Shedd, J. A. (1928). *Salt from My Attic.* Portland, ME: Mosher Press.

13 Epilogue

A lot has transpired from the time I started this research. I decided to reconnect with some of the senior executives who I'd interviewed and share my key findings for their feedback. I was also keen to find out their progress on some the risk management efforts which we had discussed earlier. Four of them had moved to newer challenges and an equal number were travelling or not reachable. However, I managed to speak with three of them and got an update. Their particular experiences appear to validate some of the findings and implications derived from this study.

I share some snippets of what they told me.

The CEO of the $2B Indian conglomerate in foods, fashion & retail on their experiences in the battle zone:

"It was a big shift then with huge momentum and we were feeling the heat. Our responses were equally intense, but quite fragmented. Most things that we tried worked at 20% of our expectations. Today, from the frenzied craziness of that time we have a more settled calmness. Each of the factors are equally valid today, but we have a better sense of priority of what we need to do, and our responses are more thought out and better planned.

In hindsight, my big learning is about how to deal with change. It's difficult to transform when you are trying to do so many things. We tried to rebuild and retool the organization, but the challenge is that you need people broad enough to absorb change. Today we have built a separate organization within, which engages with the experts but being inside the system is better at driving the change required. I didn't have the wisdom to do it then, but it's important to allow capabilities to come in without driving conflict. It's important to know that change is upon you"

While the organization tried out multiple initiatives to counter the presence of newer and disruptive competition from online players, it faced challenges from the organizational and particularly people aspects.

The COO of the $3B Indian life-style brand on their experiences in the blind zone:

"Three years ago, our biggest risks were impending foreign competition and fast changing consumer. Our jewelry and watches stood for "elegance and beauty", but it was appearing jaded. Despite boasting of the best design capabilities, we had to go out of the normal. We collaborated with a fashionista known for her risqué and avant-garde designs. Initially, it appeared that what she was suggesting was not possible in the context of our products. It was not easy, but we have managed to pull it off. It's been a big success. We have moved the brand to the platform of "sensuous and bold".

We had formed an alliance with a tech leader to bring out a co-developed smart watch, but it was difficult to get that moving. Now, we are developing the product inhouse with active engagements with a few start-ups. They have great technology whereas we have the brand and operational muscle. The initial results are very encouraging, and we are in the process of developing these skills in-house. Our acquisition has been very successful. It provided us a foothold in the e-commerce space."

The organization was able to successfully deal with the dual risks of a fast-changing consumer and the advent of newer forms of competition through active collaborations and partnerships. In the process they have acquired newer capabilities which is expected to provide greater returns in the coming years.

The MD & CEO (India) of a $4B MNC processed foods company on their experiences in the defenceless zone:

"We had two more crises since then, but, we were more equipped to handle these now. In hindsight it was a good thing that the Maggi crisis happened to us... because we were able to survive and then we have been able to reboot… challenge is good for team spirit; we became very united and focused on getting back there and winning in the market."

The organization was been able to navigate through newer environmental challenges based on past experiences, and how the challenges were instrumental in bringing the team together.

Hopefully, and as the experiences of some of the respondents appears to suggest, the conceptualization of business risk as laid out in this paper - along with focus on its dual forces - will provide managers a better understanding of business risk in future. The systematic approach to managing risk should be able to guide executives in their risk management efforts.

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Appendix I: Data Key

Final Data Key for Analysis+B3:D113

Question	Variable	Description
Q2.2	edu	What is the highest educational degree that you have received?
Q2.3	emp	Which of the following statements best describe your current nature of employment?
Q2.4_1	exp	What is your total work experience (in years)? Click/ swipe on the bar to extend - Total Experience (Years)
Q3.2	comp_bus	What is your company or unit's sector of primary business activity? (Select one only)
Q3.3	comp_other	If you selected "Other," please provide your company/ unit's primary sector of business activity
Q3.4	btbbtc	Does your company serve consumers, businesses, or both?
Q3.5	comp_class	Which of the following classifications best describes your company ?
Q3.6	comp_age	How long has your company been in this business?
Q4.2_1	exp_current_comp	How long have you been working in your current company/ role? Click/ swipe on the bar to extend - In Organization (Years)
Q4.2_2	exp_current_role	How long have you been working in your current company/ role? Click/ swipe on the bar to extend - In Current Role (Years)
Q4.3	job_title	Which of the following best describes your primary job title within your company?
Q4.4	job_func	What is your primary job function in your company?
Q4.5	job_func_other	If you selected "Other," please describe your primary job function in your company.
Q5.2	comp_role	How would you best describe the primary role of your company/ unit in it's industry value network? - Selected Choice
Q5.2_7_TEXT	comp_role_other	How would you best describe the primary role of your company/ unit in it's industry value network? - Other (please specify) - Text
		How would you describe the market that your company/ unit operates in? -
Q5.3_1	mkt_stability	Stable:Unstable
Q5.3_2	mkt_change	Changes Slowly:Changes Rapidly
		How would you describe the competitive scenario in your industry? -
Q5.4_1	competitors	Few Competitors:Many Competitors
Q5.4_2	comptetition	Weak Competition:Strong Competition
		How would you describe the nature of competition in your industry? -
Q5.5_1	diff_offering	Similar Customer Offerings:Differentiated Customer Offerings
Q5.5_2	diff_model	Similar Business Models:Differentiated Business Models
		Compared to it's competitors, please indicate your company/ business unit's position on the following dimensions: -
Q5.6_1	comp_mkt_share	Market Share
Q5.6_2	comp_prof	Profitability
Q5.6_3	comp_sales_g	Sales Growth
Q5.6_4	stck_pr_g	Stock Price Growth
Q5.6_5	stck_pr_v	Stock Price Volatility
		Given below are 7 different types of challenges and risks that an organization might face. Please indicate the EXTENT to which your company faces each of these challenges or risks in it's current business environment. -
Q6.2_1	risk_ext	External (environment, economy, policy)
Q6.2_2	risk_con	Consumer (changing habits, preferences, loyalty)
Q6.2_3	risk_com	Competition (changing, new players, offerings, business models)
Q6.2_4	risk_bop	Business Operations (changing, new or disruptive systems & processes)
Q6.2_5	risk_org	Organizational (adaptability, culture, rigidity)
Q6.2_6	risk_tech	Technology (new or disruptive, digital/ internet impact)
Q6.2_7	risk_emp	Employees (talent, capabilities, engagement, leadership)
Q6.3_1	risk_ext_eff	External (environment, economy, policy)
Q6.3_2	risk_con_eff	Consumer (changing habits, preferences, loyalty)
Q6.3_3	risk_com_eff	Competition (changing, new players, offerings, business models)
Q6.3_4	risk_bop_eff	Business Operations (changing, new or disruptive systems & processes)
Q6.3_5	risk_org_eff	Organizational (adaptability, culture, rigidity)
Q6.3_6	risk_tech_eff	Technology (new or disruptive, digital/ internet impact)
Q6.3_7	risk_emp_eff	Employees (talent, capabilities, engagement, leadership)
		Given below are some BUSINESS PARAMETERS that an organization might choose to change in dealing with it's challenges & risks.How will YOU describe your company's approach in the last few years on each of these parameters? -
Q7.2_1	prdct_rng	Product Range
Q7.2_2	serv_offr	Service Offerings
Q7.2_3	mkt_prsnc	Market Presence
Q7.2_4	cust_eng	Customer Engagement
Q7.2_5	supp_chn	Supply Chain
Q7.2_6	bus_mod	Business Model
Q7.2_7	org_str_sys	Organization Structure & Systems
Q7.2_8	emp_chng	Employees
		How has your company driven changes on these parameters? You can tick more than one option for each. -
Q7.3_1	prdct_rng_actn	Product Range
Q7.3_2	serv_offr_actn	Service Offerings
Q7.3_3	mkt_prsnc_actn	Market Presence
Q7.3_4	cust_eng_actn	Customer Engagement
Q7.3_5	supp_chn_actn	Supply Chain
Q7.3_6	bus_mod_actn	Business Model
Q7.3_7	org_str_sys_actn	Organizational Structure & Systems
Q7.3_8	emp_chng_actn	Employees
		Given below are a set of 10 capabilities which might be relevant when dealing with challenges and risks associated with people (employees, partners, vendors, consumers, etc.). How will YOU rank them in order of importance to your company's management of people risks? Please drag and drop the options in order, where 1 is MOST CRITICAL and 10 is LEAST CRITICAL. -
Q8.2_1	risk_tlnt_imp	Talent Management (hiring, retaining)
Q8.2_2	risk_emp_eng_imp	Employee Engagement (managing, motivating)
Q8.2_3	risk_org_cltr_imp	Organizational Culture (set-up, philosophy, values)
Q8.2_4	risk_cust_cntr_imp	Customer Centricity (listening, engaging, considering)
Q8.2_5	risk_ldrshp_imp	Leadership (transformational, inspiring, engaging top management)
Q8.2_6	risk_mkt_intel_imp	Market Understanding (sensing, interpreting, anticipating)
Q8.2_7	risk_coll_part_imp	Collaboration & Partnerships (developing, maintaining strategic relationships)
Q8.2_8	risk_dec_mkng_imp	Decision Making (systematic agility, faster response)
Q8.2_9	risk_risk_tk_imp	Risk Taking (culture of experimentation, innovation)
Q8.2_10	risk_tnd_imp	Training & Development (learning, skill-building)
		How would you RATE your company on each of these capabilities? -
Q8.3_1	risk_tlnt_cap	Talent Management (hiring, retaining)
Q8.3_2	risk_emp_eng_cap	Employee Engagement (managing, motivating, developing)
Q8.3_3	risk_org_cltr_cap	Organizational Culture (set-up, philosophy, values)
Q8.3_4	risk_cust_cntr_cap	Customer Centricity (listening, engaging, considering)
Q8.3_5	risk_ldrshp_cap	Leadership (transformational, inspiring, engaging top management)
Q8.3_6	risk_mkt_intel_cap	Market Understanding (sensing, interpreting, anticipating)
Q8.3_7	risk_coll_part_cap	Collaboration & Partnerships (developing, maintaining strategic relationships)
Q8.3_8	risk_dec_mkng_cap	Decision Making (systematic agility, faster response)
Q8.3_9	risk_risk_tk_cap	Risk Taking (culture of experimentation, innovation)
Q8.3_10	risk_tnd_cap	Training & Development (learning, skill-building)
		Given below are a set of 5 capabilities which might be relevant when dealing with challenges and risks associated with technologies (new or disruptive technologies, digital/ internet implications etc.). How will YOU rank them in order of importance to your company's management of technological risks? Please drag and drop the options in order, where 1 is MOST CRITICAL and 5 is LEAST CRITICAL. -
Q8.4_1	dgtl_imp	Digital Capability (enabling, working in the internet-enabled, inter-connected world)
Q8.4_2	insght_imp	Insights Capability (using increasing data for insightful decision-making, automation, advanced capabilities)
Q8.4_3	tech_enbl_imp	Technology Enablement Capability (using tech enabled systems across the business)
Q8.4_4	itis_imp	IT & IS Capability (effectively managing IT tools for infra, systems, security et. al.)
Q8.4_5	tech_intg_imp	Technology Integration Capability (adopting, integrating tech capabilities with traditional business skills)
		Which parts of your company's value chain require these capabilities in managing their technological risks? You can tick more than one option for each. -
Q8.5_1	dgtl_cap_need	Digital (enabling, working in the internet-enabled, inter-connected world)
Q8.5_2	insght_cap_need	Insights (using increasing data for insightful decision-making, automation, advanced capabilities)
Q8.5_3	tech_enbl_cap_need	Technology Enablement (using tech enabled systems across the business)
Q8.5_4	itis_cap_need	IT & IS (effectively managing IT tools for infra, systems, security et. al.)
Q8.5_5	tech_intg_cap_need	Technology Integration (adopting, integrating tech capabilities with traditional business skills)
		How would you rate your company on each of the following capabilities? -
Q8.6_1	dgtl_cap	Digital Capability (enabling, working in the internet-enabled, inter-connected world)
Q8.6_2	insght_cap	Insights Capability (using increasing data for insightful decision-making, automation, advanced capabilities)
Q8.6_3	tech_enbl_cap	Technology Enablement Capability (using tech enabled systems across the business)
Q8.6_4	itis_cap	IT & IS Capability (effectively managing IT tools for infra, systems, security et. al.)
Q8.6_5	tech_intg_cap	Technology Integration Capability (adopting, integrating tech capabilities with traditional business skills)
		How is your company trying to further develop these capabilities? Please select the option/s representing your company's approach to develop that capability. You can tick more than one option for each. -
Q8.7_1	dgtl_cap_build	Digital (enabling, working in the internet-enabled, inter-connected world)
Q8.7_2	insght_cap_build	Insights (using increasing data for insightful decision-making, automation, advanced capabilities)
Q8.7_3	tech_enbl_cap_build	Technology Enablement (using tech enabled systems across the business)
Q8.7_4	itis_cap_build	IT & IS (effectively managing IT tools for infra, systems, security et. al.)
Q8.7_5	tech_intg_cap_build	Technology Integration (adopting, integrating tech capabilities with traditional business skills)

Appendix II: Prioritization Data Tables

	Managerial Prioritization of Business Risks by Facets						
Ranking	Environmental	Technological	Environmental	Technological	Environmental	Technological	Environmental
1	49	33	29	26	23	10	5
2	17	33	33	34	32	19	7
3	15	24	21	34	26	25	30
4	18	24	24	29	30	23	27
5	15	20	17	25	26	31	41
6	20	18	23	21	25	38	30
7	41	23	28	6	13	29	35

	Capabilities to Manage People Risks									
Ranking	Leadership	Customer Centricity	Org Culture	Market Intelligence	Talent Mgmt	Decision Making	Risk Taking	Employee Engmnt	Collab & Partnerships	Training & Devplt
1	48	30	27	21	13	6	5	5	5	3
2	27	31	15	27	12	15	12	7	9	8
3	22	21	13	26	14	17	9	23	9	9
4	20	18	15	17	12	29	12	14	12	14
5	15	15	13	4	17	16	24	24	20	15
6	5	19	13	13	17	21	21	17	12	25
7	11	6	17	10	22	16	18	27	15	21
8	5	9	20	18	18	15	17	21	18	22
9	4	9	17	17	22	13	19	17	23	22
10	6	5	13	10	16	15	26	8	40	24

	Technological Capability				
Ranking	Insights	Digital	Tech Enabement	IT & IS	Tech Integration
1	51	34	25	11	31
2	38	32	30	18	34
3	29	33	38	19	33
4	18	28	42	30	34
5	16	25	17	74	20

Annexure: Survey Questionnaire

Business Risk Survey

Start of Block: Participant Information Sheet and Informed Consent Form

Q1.1 **Participant Information Sheet and Informed Consent Form**

Title of the Research Study:

Managerial Perspectives on Business Risks

Principal Investigator:

***Prakash Bagri*, Singapore Management University**

1. **Purpose of Research Study**:

The business landscape is constantly changing with increasing uncertainty and risk. This academic research focusses on how managers perceive and deal with such challenges. In particular, we wish to develop understanding on the management of business risk.

2. **Study Procedures and Duration**:

I am collecting information from senior executives across select industries in India, and therefore invite you to participate in this survey. This survey will ask you a few questions regarding the current business environment, the consequent business risks facing your company, and how you are dealing with such risks. It is likely to take upto 20 minutes of your time. Participation in this study is entirely voluntary. You can also choose not to answer any specific questions, or withdraw from the survey at anytime without any penalty. Please note that since the responses are anonymous, we are not able to accede to any data withdrawal requests after you have completed the study.

3. **Benefits of Study**:

There are no benefits for participation in this survey. Similarly, there are no penalties for non- participation (in part or total). As shared, participation in this survey is entirely voluntary. If you so wish, in appreciation of your participation you will receive an executive summary of the survey findings. Your participation in this questionnaire will

provide critical insights towards my research, which is expected to contribute towards enhancing our understanding of business risk and its management.

4. **Possible Risks of Study**:

There are no anticipated risks from this study beyond what one would typically experience in everyday life.

5. **Confidentiality and Privacy of Research Data**:

The information that you provide will be coded and kept confidential. This is an anonymous survey and no personally-identifying information will be collected in the survey. You are requested to separately email the principal investigator if you would like to receive the executive summary of the study. Additionally, any publication that results from this study will not be linked to the participants and information will be presented in an aggregated manner.

6. **Contact Details**:

For questions/ clarifications on this study, please contact me, the Principal Investigator, Prakash Bagri, at email: prakashb.2013@phdgm.smu.edu.sg, and/or prakash.bagri@gmail.com. You can also contact my supervisor, Prof. Philip Zerrillo (Professor of Marketing - Practice, SMU) at email: pzerrillo@smu.edu.sg. If you have any questions or concerns regarding your rights as a participant in this research study and wish to contact someone unaffiliated with the research team, please contact the SMU Institutional Review Board Secretariat at irb@smu.edu.sg or + 65 68281925. When contacting SMU IRB, please provide the Title of the Research Study and the name of the Principal Investigator, or quote the IRB approval number IRB-18-133-E033(1118).

Please bookmark or save a copy of this information sheet and informed consent form for your records.

Q1.2 **Participant Information Sheet and Informed Consent Form**

Title of the Research Study:
Managerial Perspectives on Business Risks
Principal Investigator:
***Prakash Bagri*, Singapore Management University**

Principal Investigator's Declaration:

I have explained and defined in detail the research procedures in which the participant (or legal representative) has consented to participate.
I also declare that the data collected for this research study will be handled as stated above.

Prakash Bagri. December 21, 2018.
Principal Investigator

Participant's Declaration:

I understand that participation is voluntary. Refusal to participate will involve no penalty.
I declare that I am at least 18 years of age.

If I am affiliated with Singapore Management University, my decision to participate, decline, or withdraw from participation will have no adverse effect on my status at or future relations with Singapore Management University.

I have read and fully understood the contents of this form, and hereby give consent to the Singapore Management University research team and its affiliates for this project to collect and/or use my data for the purpose(s) described in this form.

By clicking the "Continue/Next" button, I consent to participate in this study and agree to all of the above.

If you do not wish to participate in the survey, you may close the browser now to exit.

End of Block: Participant Information Sheet and Informed Consent Form

Start of Block: Respondent Demographics

Q2.1 The first set of questions will help me get some details about you.

Q2.2 What is the highest educational degree that you have received?

▼ High school graduate (1) ... Doctoral degree (6)

Q2.3 Which of the following statements best describe your **current** nature of employment?
You can tick more than one option.

- ☐ Working full time (more than 30 hours a week) (1)
- ☐ Working part-time (8-30 hours a week) (2)
- ☐ Student (full-time) (3)
- ☐ Student (part-time) (4)
- ☐ Not professionally employed (5)

Q2.4 What is your total work experience (in years)?
Click/ swipe on the bar to extend

0 5 10 15 20 25 30 35 40 45 50

Total Experience (Years) ()	

End of Block: Respondent Demographics

Start of Block: Firmographics

Q3.1 Please help me with some details regarding your place of work.

If you are currently employed (including self-employed) continue answering for your current company. If not, please answer the remaining questions from the perspective of your last company.

In case you are/were working in a conglomerate or holding company with multiple businesses, please provide your responses specific ONLY to your business unit.

Q3.2 What is your company or unit's sector of primary business activity? (Select one only)

▼ Energy, Chemicals, Forestry & Mining (29) ... Other (11)

Q3.3
If you selected "Other," please provide your company/ unit's primary sector of business activity

_____

Q3.4 Does your company serve consumers, businesses, or both?

▼ Consumer (1) ... Both Consumer & Business (3)

Q3.5 Which of the following classifications best describes your company ?

▼ Government/ Public Sector Company (1) ... Others (6)

Q3.6 How long has your company been in this business?

▼ Less than 5 years (1) ... Don't know/ Can't say (7)

End of Block: Firmographics

Start of Block: Respondent Role

Q4.1 I would like to ask you some questions pertaining to your specific role and experience in your company and/ or business unit.

Q4.2 How long have you been working in your current company/ role? *Click/ swipe on the bar to extend*

	0 5 10 15 20 25 30 35 40 45 50
In Organization (Years) ()	
In Current Role (Years) ()	

Q4.3 Which of the following best describes your primary job title within your company?

- Owner/ Founder/ Partner/ Principal or Equivalent (1)
- Chief Executive Officer or Equivalent (2)
- Corporate Executive (COO/CSO/CMO/CFO/CIO) or Equivalent (3)
- Senior Management (VP/ Director) or Equivalent (4)
- Other Management or Individual Contributor (5)

Q4.4 What is your primary job function in your company?

▼ General Management (1) ... Other Business Management (10)

Q4.5 If you selected "Other," please describe your primary job function in your company.

_____

End of Block: Respondent Role

Start of Block: Industry Position

Q5.1 I would like to ask you a few questions pertaining to your company/business unit in the context of the industry.

Q5.2 How would you best describe the primary role of your company/ unit in its industry value network?

- ○ Supplier (Component/ Material) (1)
- ○ Manufacturing (End-Product) (2)
- ○ Sales & Marketing (3)
- ○ Channel/ Retail (4)
- ○ Service Provider (5)
- ○ Integrated (Manufacturing to Sales) (6)
- ○ Other (please specify) (7) _____

Q5.3 How would you describe the market that your company/ unit operates in?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Stable	○	○	○	○	○	Unstable
Changes Slowly	○	○	○	○	○	Changes Rapidly

Q5.4 How would you describe the competitive scenario in your industry?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Few Competitors	○	○	○	○	○	Many Competitors
Weak Competition	○	○	○	○	○	Strong Competition

Q5.5 How would you describe the nature of competition in your industry?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Similar Customer Offerings	○	○	○	○	○	Differentiated Customer Offerings
Similar Business Models	○	○	○	○	○	Differentiated Business Models

Q5.6 Compared to its competitors, please indicate your company/ business unit's position on the following dimensions:

	Significantly Lower (1)	Lower (2)	Around the Same (3)	Higher (4)	Significantly Higher (5)	No Opinion (6)
Market Share (1)	○	○	○	○	○	○
Profitability (2)	○	○	○	○	○	○
Sales Growth (3)	○	○	○	○	○	○
Stock Price Growth (4)	○	○	○	○	○	○
Stock Price Volatility (5)	○	○	○	○	○	○

End of Block: Industry Position

Start of Block: Types of Challenges & Risks

Q6.1 A business has to deal with different types of challenges and risks. I would like to know about the types of challenges and risks facing your company today. The following questions intend to capture your thoughts on this subject.

Q6.2 Given below are 7 different types of challenges and risks that an organization might face.
Please indicate the EXTENT to which your company faces each of these challenges or risks in its current business environment.

External (environment, economy, policy) (1)	▼ Greatly (1) ... No Opinion (4)
Consumer (changing habits, preferences, loyalty) (2)	▼ Greatly (1) ... No Opinion (4)
Competition (changing, new players, offerings, business models) (3)	▼ Greatly (1) ... No Opinion (4)
Business Operations (changing, new or disruptive systems & processes) (4)	▼ Greatly (1) ... No Opinion (4)
Organizational (adaptability, culture, rigidity) (5)	▼ Greatly (1) ... No Opinion (4)
Technology (new or disruptive, digital/ internet impact) (6)	▼ Greatly (1) ... No Opinion (4)
Employees (talent, capabilities, engagement, leadership) (7)	▼ Greatly (1) ... No Opinion (4)

Q6.3 How will YOU rank these 7 challenges and risks in terms of their EFFECT on your company in its current business environment?

Please drag and drop the options in your preferred order, where 1 has the MOST EFFECT and 7 has the LEAST EFFECT.

_____ **External** (environment, economy, policy) (1)
_____ **Consumer** (changing habits, preferences, loyalty) (2)
_____ **Competition** (changing, new players, offerings, business models) (3)
_____ **Business Operations** (changing, new or disruptive systems & processes) (4)
_____ **Organizational** (adaptability, culture, rigidity) (5)
_____ **Technology** (new or disruptive, digital/ internet impact) (6)
_____ **Employees** (talent, capabilities, engagement, leadership) (7)

End of Block: Types of Challenges & Risks

Start of Block: Risk Management Outcomes

Q7.1 I would like to know about how your company deals with these challenges and risks.
The following questions are intended to capture your perception on this theme.

Q7.2 Given below are some BUSINESS PARAMETERS that an organization might choose to change in dealing with its challenges & risks.
How will YOU describe your company's approach in the last few years on each of these parameters?

Product Range (1)	▼ Changed far too much (1) ... No Opinion (6)
Service Offerings (2)	▼ Changed far too much (1) ... No Opinion (6)
Market Presence (3)	▼ Changed far too much (1) ... No Opinion (6)
Customer Engagement (4)	▼ Changed far too much (1) ... No Opinion (6)
Supply Chain (5)	▼ Changed far too much (1) ... No Opinion (6)
Business Model (6)	▼ Changed far too much (1) ... No Opinion (6)
Organization Structure & Systems (7)	▼ Changed far too much (1) ... No Opinion (6)
Employees (8)	▼ Changed far too much (1) ... No Opinion (6)

Q7.3 How has your company driven changes on these parameters?

You can tick more than one option for each.

	Internal Development (1)	Partnerships/ Collaboration (2)	External Acquisition (3)	Business Diversification (4)	Others (5)
Product Range (1)	☐	☐	☐	☐	☐
Service Offerings (2)	☐	☐	☐	☐	☐
Market Presence (3)	☐	☐	☐	☐	☐
Customer Engagement (4)	☐	☐	☐	☐	☐
Supply Chain (5)	☐	☐	☐	☐	☐
Business Model (6)	☐	☐	☐	☐	☐
Organizational Structure & Systems (7)	☐	☐	☐	☐	☐
Employees (8)	☐	☐	☐	☐	☐

End of Block: Risk Management Outcomes

Start of Block: People & Technology Risk

Q8.1 Finally, I would like to know ask you specifically about capabilities required to manage challenges and risks associated with people and technologies.

Here I define people risk and technology risk as follows:

People risk *- the possibility of an adverse or deviant business outcome arising from the firm's engagement with people (including employees, partners, vendors and customer), and through changes in the people themselves.*

Technological risk *- the possibility of an adverse or deviant outcome arising out of technological developments (new or disruptive technologies, digital/ internet implications etc) and changes in technology.*

The following questions are intended to capture your perception on this theme.

Q8.2 Given below are a set of 10 capabilities which might be relevant when dealing with **challenges and risks associated with people** *(employees, partners, vendors, consumers, etc.)*. How will YOU rank them in order of importance to your company's management of people risks?

Please drag and drop the options in order, where 1 is MOST CRITICAL and 10 is LEAST CRITICAL.

_____ **Talent Management** (hiring, retaining) (1)
_____ **Employee Engagement** (managing, motivating) (2)
_____ **Organizational Culture** (set-up, philosophy, values) (3)
_____ **Customer Centricity** (listening, engaging, considering) (4)
_____ **Leadership** (transformational, inspiring, engaging top management) (5)
_____ **Market Understanding** (sensing, interpreting, anticipating) (6)
_____ **Collaboration & Partnerships** (developing, maintaining strategic relationships) (7)
_____ **Decision Making** (systematic agility, faster response) (8)
_____ **Risk Taking** (culture of experimentation, innovation) (9)
_____ **Training & Development** (learning, skill-building) (10)

Q8.3 How would you RATE your company on each of these capabilities?

Talent Management (hiring, retaining) (1)	▼ Best-of-Breed (1) ... No Opinion (6)
Employee Engagement (managing, motivating, developing) (2)	▼ Best-of-Breed (1) ... No Opinion (6)
Organizational Culture (set-up, philosophy, values) (3)	▼ Best-of-Breed (1) ... No Opinion (6)
Customer Centricity (listening, engaging, considering) (4)	▼ Best-of-Breed (1) ... No Opinion (6)
Leadership (transformational, inspiring, engaging top management) (5)	▼ Best-of-Breed (1) ... No Opinion (6)
Market Understanding (sensing, interpreting, anticipating) (6)	▼ Best-of-Breed (1) ... No Opinion (6)
Collaboration & Partnerships (developing, maintaining strategic relationships) (7)	▼ Best-of-Breed (1) ... No Opinion (6)
Decision Making (systematic agility, faster response) (8)	▼ Best-of-Breed (1) ... No Opinion (6)
Risk Taking (culture of experimentation, innovation) (9)	▼ Best-of-Breed (1) ... No Opinion (6)
Training & Development (learning, skill-building) (10)	▼ Best-of-Breed (1) ... No Opinion (6)

Q8.4 Given below are a set of 5 capabilities which might be relevant when dealing with **challenges and risks associated with technologies** (new or disruptive technologies, digital/ internet implications etc.). How will YOU rank them in order of importance to your company's management of technological risks?

Please drag and drop the options in order, where 1 is MOST CRITICAL and 5 is LEAST CRITICAL.

_____ **Digital Capability** (enabling, working in the internet-enabled, inter-connected world) (1)

_____ **Insights Capability** (using increasing data for insightful decision-making, automation, advanced capabilities) (2)

_____ **Technology Enablement Capability** (using tech enabled systems across the business) (3)

_____ **IT & IS Capability** (effectively managing IT tools for infra, systems, security et. al.) (4)

_____ **Technology Integration Capability** (adopting, integrating tech capabilities with traditional business skills) (5)

Q8.5 Which parts of your company's value chain require these capabilities in managing their technological risks?

You can tick more than one option for each.

	Research & Development (1)	Engineering/ Production (2)	Operations (3)	Sales & Distribution (4)	Marketing (5)	Partners & Collaborators (6)	End-users (7)
Digital (enabling, working in the internet-enabled, inter-connected world) (1)	☐	☐	☐	☐	☐	☐	☐
Insights (using increasing data for insightful decision-making, automation, advanced capabilities) (2)	☐	☐	☐	☐	☐	☐	☐
Technology Enablement (using tech enabled systems across the business) (3)	☐	☐	☐	☐	☐	☐	☐
IT & IS (effectively managing IT tools for infra, systems, security et. al.) (4)	☐	☐	☐	☐	☐	☐	☐
Technology Integration (adopting, integrating tech capabilities with traditional business skills) (5)	☐	☐	☐	☐	☐	☐	☐

Q8.6 How would you rate your company on each of the following capabilities?

Digital Capability (enabling, working in the internet-enabled, inter-connected world) (1)	▼ Best-of-Breed (1) ... No Opinion (6)
Insights Capability (using increasing data for insightful decision-making, automation, advanced capabilities) (2)	▼ Best-of-Breed (1) ... No Opinion (6)
Technology Enablement Capability (using tech enabled systems across the business) (3)	▼ Best-of-Breed (1) ... No Opinion (6)
IT & IS Capability (effectively managing IT tools for infra, systems, security et. al.) (4)	▼ Best-of-Breed (1) ... No Opinion (6)
Technology Integration Capability (adopting, integrating tech capabilities with traditional business skills) (5)	▼ Best-of-Breed (1) ... No Opinion (6)

Q8.7 How is your company trying to further develop these capabilities? Please select the option/s representing your company's approach to develop that capability. *You can tick more than one option for each.*

	Employee Training & Development (1)	Hiring Domain Experts (2)	External Consultants (3)	Partnering other Organizations (4)	Outsourced External Agencies (5)	Acquisitions & Investments (6)	Not Applicable (7)
Digital (enabling, working in the internet-enabled, inter-connected world) (1)	☐	☐	☐	☐	☐	☐	☐
Insights (using increasing data for insightful decision-making, automation, advanced capabilities) (2)	☐	☐	☐	☐	☐	☐	☐
Technology Enablement (using tech enabled systems across the business) (3)	☐	☐	☐	☐	☐	☐	☐
IT & IS (effectively managing IT tools for infra, systems, security et. al.) (4)	☐	☐	☐	☐	☐	☐	☐
Technology Integration (adopting, integrating tech capabilities with traditional business skills) (5)	☐	☐	☐	☐	☐	☐	☐

End of Block: People & Technology Risk

Start of Block: End

Q9.1 I thank you for your time spent taking this survey. Your response has been recorded.

End of Block: End