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Characteristics of services – a new approach uncovers their value

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Abstract

Purpose – Four characteristics have been regularly applied to services: intangibility, heterogeneity, inseparability, perishability (IHIP). More and more exceptions occur which have resulted in substantial criticism. This paper aims to show that each characteristic is valid and useful when related to an individual aspect of services instead of being assigned to services as a single entity.

Design/methodology/approach – Based on customer integration, a framework (FTU framework) and a resource typology are developed. These approaches are the theoretical foundation of the analysis.

Findings – The FTU framework and a resource typology reveal different aspects of services and allow the assignment of the IHIP characteristics to them. Intangibility is assigned to the service offering, heterogeneity and inseparability to customer resources, and perishability to the facilities of the provider.

Research limitations/implications – The paper is based on a theoretical analysis. Researchers may want to empirically test the approach.

Practical implications – Assigning the IHIP characteristics more clearly to certain aspects of services reveals their origin and makes them more tractable. For example knowing that heterogeneity of services is due to customers resources makes it more predictable and manageable.

Originality/value – Although the IHIP characteristics are both widely cited and criticized, existing research has only tried to find and establish new characteristic(s). The approach of this paper is original because it takes a more trenchant look at them in order to develop a framework identifying aspects of services for which they apply.

Keywords Services, Intangible assets, Customers, Integration

Paper type Research paper

An executive summary for managers and executive readers can be found at the end of this article.

Introduction

Scientific exchange and advancement require sound definitions and characterizations of its underlying terms and constructs. For that reason the discipline of services marketing has enduringly tried to define and characterize its core term “services”. From the 1980s onward, the acceptance of the so-called IHIP characteristics (intangibility, heterogeneity, inseparability and perishability) was widely observable (see Edgett and Parkinson, 1993; Zeithaml *et al.*, 1985 for an overview).

Later, however, several criticisms on IHIP characteristics were voiced (Lovelock and Wright, 2001; Gummesson, 2000; Vargo and Lusch, 2004). Lovelock and Gummesson (2004, p. 32) poignantly state: “As a paradigm, the notion that the four IHIP characteristics make services uniquely different from goods is deeply flawed.” The reasons are twofold. First, the focus of services marketing has changed and secondly the development of information and communication technology has advanced dramatically. The initial conception of services

marketing research looked predominantly at personal services (Bowen, 2000) or low-tech, high-touch services. With this services marketing focus, the dichotomous view of manufactured tangible goods and intangible, heterogeneous, inseparable and perishable services was not such a matter of controversy.

Moreover, following Rust (2004), we too perceive more and more changes in general conditions, especially in the development of technology. These changes increasingly water down the applicability of most of the IHIP characteristics of services. Today, the inseparability of production and consumption, as well as the perishability of services can often be overcome by technology-based communications, for example interactive, web-based lectures in distance learning or minimally invasive surgery which allows physicians to perform from a distance. It is therefore not astonishing that dissatisfaction with the IHIP paradigm has grown over the years with this shifting focus and technology development (Beaven and Scotti, 1990; Grönroos, 2000; Grove *et al.*, 2003; Lovelock and Gummesson, 2004; Vargo and Lusch, 2004; Wright, 1995).

As a consequence, due to a lack of suitable characteristics, the core term “services” remains undefined. This gap in literature is incomprehensible as a whole scientific community bases its capacity and accomplishments on this term. This is also astonishing since half of the services marketing experts interviewed by Edvardsson *et al.* (2005) perceive the

characteristics as valuable (see also Iacobucci, 1998). For example, heterogeneity of personal services called attention to quality aspects (Donabedian, 1980), intangibility pointed to uncertainty in consumer buying decisions (Bateson, 1995; Shostack, 1977), inseparability emphasized the importance of the service encounter (Bitner and Hubbert, 1994), and perishability addressed capacity aspects of services compared to autonomously produced goods (Edgett and Parkinson, 1993).

For these reasons, we among others perceive a noticeable gap in literature regarding a thorough investigation of the current characteristics of services. This is consistent with, for example, Lovelock and Gummesson (2004) who state: "...each of the IHIP characteristics taken separately – and sometimes in partial combination – has an ongoing potential to inform research and practice [...]. However, more research is needed...". Likewise Edvardsson *et al.* (2005, p. 115) state: "... we should not generalize the characteristics of services, but use them when they are relevant and in situations when they are useful and fruitful. We need to understand the conditions under which they apply".

We see two possible solutions to this situation:

- 1 find and establish new characteristic(s) and abandon the four established ones; or
- 2 take a more trenchant look at the IHIP characteristics to develop a framework identifying situations in which they apply.

Scarce research has tried to find and establish alternative characteristics of services. Hill (1977) emphasizes the characteristic of "change" and defines services as changes of an economic unit which result from the activity of another economic unit (similar Hill, 1999). An early approach from Lovelock (1983) proposes different classifications of services to approach their characteristics. For example by focusing on the nature of the service act he distinguishes between tangible and intangible actions towards people or things. This idea will be taken on by our approach focusing on intangibility and inseparability as a characteristic. Apart from this classification Lovelock (1983) classifies services based on the leeway for customization and judgment and distinguishes between the extent to which contact personnel is involved in a diagnosis of customer problems and the customization of the implementation. This reveals that not every service is heterogenic and gives us an idea what the origin of the heterogeneity of the service is. A third classification involves the nature of supply and demand for services and distinguishes between the extent to which supply is constrained and fluctuates over time. This classification gives a first idea of the origin of perishability and is picked up by investigating the perishability of services. Although Lovelock's (1983) approach aims to classify services, the criteria he chooses are very useful for investigating further into the characteristics of services. A recent contribution by Lovelock and Gummesson (2004) proposes a new paradigm for services marketing by differentiating marketing transactions involving an ownership transfer (goods) and those not involving an ownership transfer (services). The latter include the mere right to obtain rental or access.

To the best of our knowledge, existing research has also not tried to remedy the situation by choosing option two and taking a closer look at the IHIP characteristics. Given the characteristics' apparent usefulness, as well as criticism about

them, our goal is to contribute to services marketing literature by taking a definitive look at the IHIP characteristics. This will be based on the FTU framework with its three stages of service provision (facilities, transformation and usage) and provider and customer resources (Moeller, 2008). In our view, it is not the characteristics that are unsuitable, but their point of reference: services as a single entity. We aim to show that our approach allows us to clearly identify the point of reference of the IHIP characteristic because each is valid and useful in regard to a particular stage or corresponding resources.

The remainder of the article addresses the above mentioned aim: First, the FTU framework and the related resources are identified. Based on this, we will illustrate how the IHIP characteristics can be further exemplified. To do so, we will refer to literature on the characteristics of services and take critical contributions into account. Finally, implications for services marketing are put forth, and we conclude our thoughts.

The FTU framework

The FTU framework includes three stages of service provision: facilities, transformation and usage and two types of resources: customers' and providers' resources (Moeller, 2008). The following paragraphs will describe the stages in more detail.

The first stage of the FTU framework is called "facilities". It is the foundation of value creation and comprises all provider resources, including machines, persons or know-how, which need to be accessible before any service provision becomes feasible (Mayer *et al.*, 2003; Shostack, 1992). Resources are tangible, intangible and human assets that are tied to the firm at a given point of time (Barney, 1991). It can equally be referred to as the process of services assembly (Mayer *et al.*, 2003) or as prerequisites for services (Edvardsson *et al.*, 2000). As long as there is no customer demand on the provider's resources, the facilities remain unused (Fließ and Kleinaltenkamp, 2004).

The second stage of the FTU framework is the "transformation" (similar Donabedian, 1980; Fließ and Kleinaltenkamp, 2004; Mayer *et al.*, 2003; Shostack, 1992). The change or modification inherent in services has been emphasized before (e.g. Hill, 1977; Lovelock, 1983). In general this transformation can occur on customer or provider resources. Against the background of the SDL, especially the FP 3 that goods are distribution mechanisms for service provision (e.g. Vargo and Lusch, 2008), transformation of provider resources is understood as indirect service provision (goods as distribution mechanism) and transformation of customer resources as direct service provision (services) (Moeller, 2008). In contrast to the production of goods containing provider resources only, service providers are unable to purchase or acquire all the inputs for the transformation process themselves (Hill, 1977). "The principle 'input', namely the good being serviced, continues to be owned by the customer of the service" (Hill, 1977, p. 319). Such customer resources can be customers themselves as a person (e.g. surgery or hair cuts), their physical objects (e.g. car repairs), their rights (e.g. lawyers), their nominal goods (e.g. investment banking) and/or their data (e.g. tax advisors) (Fließ and Kleinaltenkamp, 2004). The integration of customer resources is always bound to

some customer activity because otherwise no customer inquiry could be tied to a certain customer's resource. By providing services, customer resources are combined with the so-called provider resources. This combination results in a transformation of customer resources.

Transforming customers' resources within the transformation leads to the third stage of the FTU framework, the so-called "usage" (similar Donabedian, 1980; Fließ and Kleinaltenkamp, 2004; Mayer *et al.*, 2003; Shostack, 1992). The outcome of the service provision is the customer's option to make use of this transformation (of customer or provider resources) and create value for them. Mostly the transformation is embodied in a bundle of different elements (Gummesson, 1994). It contains elements which are either pre-prepared within the facilities, e.g. a standardized brochure, or are co-produced by customer and provider during the transformation of customer resources, e.g. an individualized offering (Fließ and Kleinaltenkamp, 2004).

The facility stage and the transformation stage differ in one main aspect: In contrast to provider resources, which the service provider has at full disposal, the service provider's disposal of customer resources is restricted (Gummesson, 2004; Lengnick-Hall, 1996; Mayer *et al.*, 2003). Accordingly, the service provider can make customer independent or autonomous decisions on his own resources and processes. The integration of customers' resources during service provision restricts this autonomy, and calls for integrative decisions (Fließ and Kleinaltenkamp, 2004). Figure 1 gives an overview of the FTU framework including the stages and resources of direct service provision.

Recasting, the deduced definitions are as follows: Services as direct service provision are offerings which include a transformation of customer resources in terms of persons, objects, nominal goods and/or data. Goods include a transformation of provider resources only, which leads to an outcome acting as a distribution mechanism of service provision.

Coupling the IHIP characteristics with the FTU framework

We aim to show that although the IHIP characteristics have been criticized being over-simplified (e.g. Lovelock and

Wright, 2001) they can still be very valuable for services marketing (e.g. Edvardsson *et al.*, 2005). To do so we give an overview of the literature regarding each of the characteristics; exemplify the criticism; and couple the characteristics with the FTU framework to achieve clarity regarding the point of reference of the characteristics. Figure 2 gives an overview on the main results, which will be exemplified in the following paragraphs.

Overview of literature on intangibility

The declaration that services are immaterial and accordingly intangible has a very long tradition. Say (1836) was the first author who brought up the services characteristic of immateriality and inseparability. This came up in response to the work of Adam Smith (1776) whose work focused on how the production of wealth functions within an economy. He purported that employees producing services are unproductive labor because only directly exchangeable material objects represented the wealth of a nation (Smith, 1776). In contrast, Say (1836) argued that immaterial products can create wealth and that the related activities are indeed productive: "Nor can I discover any solid reason, why the talent of the painter should be deemed productive, and not the talent of the musician" (Say, 1836, p. 120). Since the most common definition of intangibility is the state of not being palpable and material, the terms intangibility and immateriality can be considered equal (Shostack, 1977, also Lovelock and Gummesson, 2004; for a different view on this see Laroche *et al.*, 2001; McDougall and Snetsinger, 1990). Statements to this effect usually describe the intangibility of services as follows: "A good is an object, a device, a thing; a service is a deed, a performance, an effort" (Berry, 1980, p. 24) or "services is something that can be bought and sold, but which can not drop on your foot" (Gummesson, 1987, p. 22).

Although some of the very early publications on services marketing did not accept the attribute of intangibility (Regan, 1963; Rathmell, 1966), it has since been referred to by the majority of researchers (see Edgett and Parkinson, 1993; Zeithaml *et al.*, 1985 for an overview). Implicitly, and sometimes explicitly, intangibility was considered the most important characteristic of services (Bowen and Schneider, 1988; Edgett and Parkinson, 1993; McDougall and

Figure 1 FTU framework

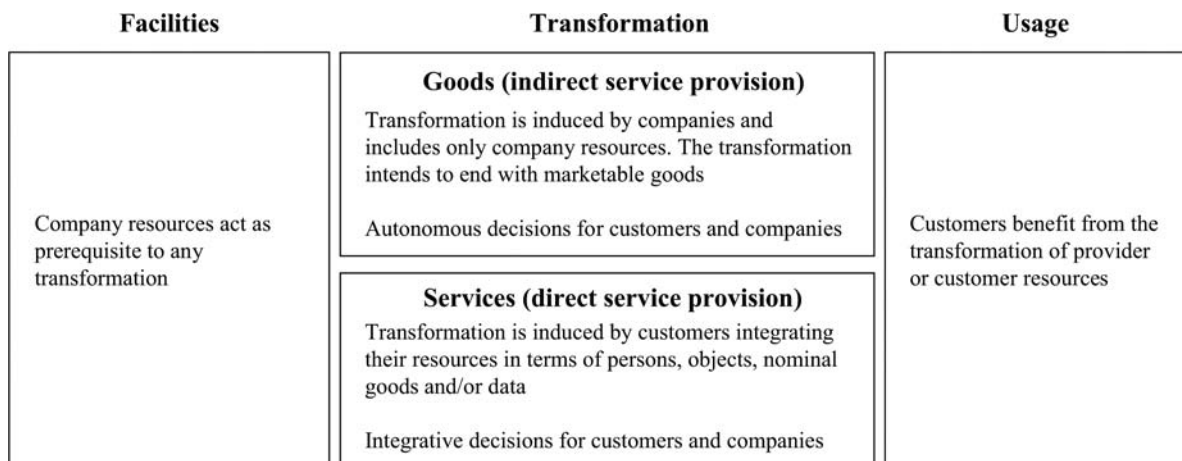


Figure 2 Approaches characterizing services

	Common understanding in literature	Lovelock	Hill	Lovelock/Gummesson	FTU framework
	Characteristics of services applied to services as a single entity	Service classification to reveal their characteristics	Proposal of a new characteristic	Proposal of a new characteristic	Characteristics of services applied to aspects of services
Intangibility	<ul style="list-style-type: none"> • Not being palpable or material • A good is an object, a device, a thing; a service is a deed a performance, an effort 	Service classification of tangible and intangible actions towards people or objects	Change as a characteristic of services	Distinction between marketing transactions involving an ownership transfer (goods) and those not involving an ownership transfer (services) (right to obtain of rental/ access)	The provider is forced to offer a performance promise, which is intangible
Heterogeneity	<ul style="list-style-type: none"> • Difficulty in standardizing services • Related to 1) outcome, 2) production performance of different producers or persons, 3) over a certain period of time or 4) participation of customers 	Service classification to the extent which customer contact personnel perform customization in diagnosis and implementation			Customer resources are heterogeneous by nature, because they belong to the customers themselves
Inseparability	<ul style="list-style-type: none"> • Production and consumption occur simultaneously • Service provider is often physically present when consumption takes place • Services are first sold, then produced and consumed simultaneously, whereas goods are first produced, then sold and afterwards consumed 	Service classification to the extent which supply is constrained and to the extent which demand fluctuates over time			Customer resources are necessary for services provision and must be present for the resource transformation
Perishability	<ul style="list-style-type: none"> • The performance does not fix or realize itself in any particular subject or vendible commodity • The unavailable option of storing or stockpiling services 				The capacity perishes if not activated by the integration of customer resources

Snetsinger, 1990; Vargo and Lusch, 2004; Wright, 1995; Zeithaml *et al.*, 1985). This is expressed by the fact that most services/goods distinctions were built on the state of intangibility of offerings (Bateson, 1979; Bowen and Schneider, 1988; Shostack, 1977). Its importance has been emphasized in literature because of its major effects, e.g. a regular higher uncertainty of the buying decisions and the overall perception of services (Shostack, 1977).

Criticism of intangibility

Intangibility has been criticized because there are usually many tangible objects involved in a services performance (Shostack, 1977). Exemplarily Gummesson states:

Airlines are classified as service companies. If I fly, the aircraft, the food, the drinks, and the staff are very tangible. [...] If I am operated at a hospital I am myself the “machine,” the object of “repair and maintenance”. It is unpleasant, it may hurt. I can get better, worse or die. Can it be more tangible? (Gummesson, 2000, p. 123).

Furthermore, tangibility is deemed to be the provider perspective, and since customers will not make a distinction between tangible and non-tangible offerings, it is said to be an inadequate perspective for marketing in general (Vargo and Lusch, 2004).

Coupling intangibility with the stages of direct service provision

This criticism leads us to a closer examination of the intangibility of services against the background of the FTU

framework. First of all, we duly note that the facilities are usually very tangible in nature, as is equivalently expressed in the criticism above (Gummesson, 2000). But not only the providers resources (e.g. the aircraft, the food, and the staff) but also customer resources (e.g. baggage or the passenger) are often tangible or involve tangible items (see also Lovelock, 1983). If customer resources acting as input into the transformation are tangible, so too will the outcome of the transformation be tangible. To put it more precisely, the attribute of intangibility is neither related to the facilities which include the providers’ resources nor to the customers’ resources acting as input and as outcome of the transformation. Rather, we perceive the change or transformation of the customers’ resources and not the resources themselves as intangible.

We find support for our statement in literature: “Although services often include tangible actions [...] the services performance itself is basically an intangible” (Lovelock, 1992, p. 6). The process of educating or operating is intangible and not the teacher, the books or the instruments. The transformation of customer resources is the core of a service providing process (Hill, 1977) which makes intangibility an important issue because this transformation is very often the reason for the consumption of services. Indeed many authors stress the importance of the transformation or the changes (similar Beaven and Scotti, 1990; Hill, 1977; Fließ and Kleinaltenkamp, 2004; Grönroos, 1998; Rathmell, 1966). In

our view the authors are absolutely right in highlighting the transformation process.

Nevertheless, looking at the transformation process of provider resources (goods), it needs to be mentioned that the intangibility of resource transformation is not services specific. In goods production the input as well as the output contain tangible items and the resource transformation is equally intangible. Thus, the intangibility of the transformation is not suitable as a characteristic of services. However, there still is a difference between the two transformation processes. In the transformation process of customer resources the customer is affected by the transformation process in general and also by its intangibility. This is in contrast to goods production, as only provider resources act as input and thus the customer is not affected by (the intangibility of) the transformation process.

The transformation in services is dependent on the integration of the customers' resources since their integration usually initiates the transformation. Subsequent services have to be offered (and usually sold) as a performance promise. Thus, a consulting company, a hairdresser or a teacher can promise to perform any transformation in future, but this promise is intangible in nature. This is in contrast to many goods, for which the transformation of provider resources is already terminated. They can be shown and tried. Hence, the services offer is the appropriate point of reference for intangibility.

To sum up, we have established that the intangibility of transformation processes is not service specific, but rather the intangibility of the service offering. Goods producers are not dependent on customer resources for completing the offering unless they individualize their goods. However, this results in an inclusion of customer resources (information) and causes them to have the same characteristics as services have.

Overview of literature on heterogeneity

Heterogeneity of services concerns the difficulty in standardizing services (Edgett and Parkinson, 1993). In existing research heterogeneity has been related to different aspects of services: outcome (Beaven and Scotti, 1990; Lovelock and Gummesson, 2004; Palmer and Cole, 1995), production performance of different producers or persons (Iacobucci, 1998; Kotler, 1994; Lovelock and Gummesson, 2004; Zeithaml *et al.*, 1985) and production performance over a certain period of time (Iacobucci, 1998; Zeithaml *et al.*, 1985). In addition, heterogeneity has been assigned to heterogeneous participation of customers in a transformation (Palmer and Cole, 1995).

Criticism of heterogeneity

Heterogeneity has been criticized in literature as not being characteristic of services because of the countless possibilities of standardization in services which result in a reduction of heterogeneity (Lovelock and Gummesson, 2004). It has been put forth that services of a retail bank equipping an ATM is as standardized as many other goods (Gummesson, 2000, p. 123). Based on the stages and the related resources we can identify aspects of services which offer possibilities for standardization and aspects of services which impede standardization by the provider. The latter are thus heterogeneous by nature.

Coupling heterogeneity with the stages of service provision

Outcome and performance of different producers over time

Existing research states that especially in labor intensive services the service providers have difficulties achieving uniform outcomes (Rust *et al.*, 1996). Some authors state that "the quality and essence of services (e.g. a medical examination, car rental, restaurant meal) can vary from producer to producer, from customer to customer, and from day to day" (Zeithaml *et al.*, 1985, p. 34). Vargo and Lusch (2004) deny heterogeneity as a myth because it is considered to be caused by heterogeneous human input. We agree that human performance can vary from producer to producer and from day to day. This is equally true not only for services but also for goods. Handmade bakery products can vary considerably between producers and when made at different times, but they can also be produced by machines abating their variability. Reduction of variability by means of machines or computers can also be achieved in services (Lovelock, 1983), e.g. an ATM or other retail banking services. Consequently, neither the variability between outcomes or producers nor the variability within the course of time is a services specific attribute. We agree that heterogeneity is inseparably related to the performance of human beings in contrast to the performance of machines (Vargo and Lusch, 2004), but both are present for transforming provider resources (goods) or customer resources (services).

Varying participation of customers

Transformation of customer resources causes uncertainty for both actors. As an example, customers may have diffuse preferences which can result in the inability to describe them properly. This might further result in customers disliking the service provision. Let's assume a customer has to explicitly describe the location of his broken down car to a tow service. The varying degree to which the customer can accurately provide this information is proportional to the varying amount of time it will take the tow service to arrive. The heterogeneity of the input substantially affects the service provision. And customer resources as input naturally differ from customer to customer. This is due to two aspects: such resources originate from different customers; and the disposition from the provider regarding customer resources is restricted. We find support by an early contribution from Lovelock (1983, p. 16) who proposes to distinguish between a diagnosis and an implementation of service provision and points out that "the outcome of the diagnosis cannot always be predicted accurately". Palmer and Cole (1995), also state: "Because customers are usually involved in the production process for services at the same time they consume it, it can be difficult to carry out monitoring and control to ensure consistent standards." This might be the main reason why heterogeneity has been focused on by so many authors in services quality.

Overall, we believe that the reference object of heterogeneity should be customer resources instead of its consequences or the transformation itself. This reveals the value of heterogeneity for services marketing, which will be further discussed in the implications section.

Overview of literature on inseparability

The attribute of inseparability was introduced by Say (1836) who maintained that service production and consumption

occur simultaneously. Hence, they were perceived as inseparable. Berry (1980, p. 25), correspondingly states in the following that “simultaneous production and consumption means that the service provider is often physically present when consumption takes place.” Common examples of inseparable services are education, consultations of physicians, or concerts.

Edgett and Parkinson(1993) assert in their overview that inseparability has been widely referred to in literature. In our opinion the relevance of inseparability for services marketing is basically due to two reasons. First, because services marketing started focusing on personal services (Bowen, 2000), inseparability emphasized the necessary interaction between provider and customer. Those services encounters and especially the services personnel as boundary spanner are assumed to have a major impact on the consumption experience (Bitner, 1990). Second, inseparability has drawn attention to potential problems within capacity management of services (Edgett and Parkinson, 1993). Services are assumed to be first sold, then produced and consumed simultaneously, whereas goods are first produced then sold and afterwards consumed (Regan, 1963; Berry, 1980). As Bowen and Schneider (1988, p. 52) exemplarily state: “Simultaneity dictates that when the demand for a service is present the service must be produced . . .”.

Criticism of inseparability

However, the attribute of inseparability has been criticized:

Simple observations will show that numerous widely used business and consumer services delivered to customer's possessions – such as transporting freight, laundering clothes, and undertaking routine cleaning [...] are most commonly performed in the customer's absence (Lovelock and Gummesson, 2004, p. 29).

Therefore, Lovelock and Gummesson (2004) conclude that there are far too many separable services to justify the generalization that inseparability is a distinctive characteristic of services.

Coupling inseparability with the stages of service provision

The above-mentioned criticism can be invalidated when the point of reference for inseparability is specified. For this we built on an early contribution by Lovelock (1983). He makes a distinction of services directed at people's bodies or directed at their physical possessions. We too have emphasized that the transformation of customer resources is the core of services. The required customers resources (e.g. customers themselves, their physical objects, their rights, their nominal goods and/or their data) must, of course, be present for a transformation of them. As Lovelock (1983) points out, this reveals if the customer needs to be physically present during the service provision. If inseparability is related to customers' resources and not the customer himself the attribute of inseparability is perfectly applicable. The freight, the laundry, the flat to be cleaned or the student to be educated are the customer resources that are inseparably tied to their transformation.

Subsequently, in the sense of the FTU framework, the attribute of inseparability does not mean that the customer necessarily has to be present during the entire transformation process. It means that the customer's resources, which are to be transformed, have to be present.

Overview of literature on perishability

The attribute of perishability for services also has a long tradition. Adam Smith (1776, p. 351) noted “the labour of the menial servant, on the contrary, does not fix or realize itself in any particular subject or vendible commodity. His services perish in the very instant of their performance”. In literature on services marketing research in the mid 1980s and later, perishability has often been associated with the unavailable option of storing or stockpiling services (Beaven and Scotti, 1990; Edgett and Parkinson, 1993; Kotler, 1994; Vargo and Lusch, 2004).

Criticism of perishability

Perishability or the restricted option to stockpile or inventory services have also been criticized:

The claim that services cannot be stored is nonsense. Services are stored in systems, buildings, machines, knowledge and people. The ATM is a store of standardized cash withdrawals. The emergency clinic is a store of skilled people, equipment and procedures. The hotel is a store of rooms (Gummesson, 2000, p. 124).

Edvardsson *et al.* (2005) relate the criticism of the restricted possibilities of storage of services to the fact that memories of service provision can be kept for years. Following this line of reasoning, Lovelock (2000) claims that time-defined perishability of performance should be differentiated from continued benefits. We agree and, as such, investigate the object of reference of perishability in the following paragraph.

Coupling perishability with the stages of service provision

Perishability of the outcome

As illustrated earlier, the consumption of services is often associated with a transformation (e.g. enjoying a theatre). Smith (1776) is correct when stating that the outcome of the transformation seems to perish right away because at the end of the process all that remains is the perceived utility of it. However, the perishability of the outcome at the end of the consumption process can be similar when looking at goods. For example, after having eaten a meal or having used up goods, the outcome perishes and all that lasts is its utility. For goods as well as for services this utility can be very sustainable, e.g. education or surgery (Hill, 1977). This is in line with Edvardsson *et al.* (2005) who attest to the possible long-term effects in the memory of service provision. As such, the perishability of the outcome is not a suitable reference object to characterize services.

Perishability of the capacity

In literature perishability is not only associated with the outcome of service, but also with the service provider's capacity:

Because services is a deed or performance rather than a tangible item the customer keeps, it is “perishable” and can not be inventoried. Of course, the necessary facilities, equipment, and labour can be held in readiness to create a service, but these simply represent productive capacity, but not the product itself (Lovelock and Wright, 2001, p. 12).

It has been illustrated that the facilities are activated by the integration of customer resources. To manage capacity the provider is directly dependent on the demand of the customers (Ng *et al.*, 1999). This is in contrast to goods production since “manufacturing firms can inventory supplies of their products as a hedge against fluctuations in demand” (Lovelock, 1983, p. 16). Hill (1977, p. 319) describes services as changes of an economic unit and equally emphasizes this point:

The fact that services cannot be put into stock has nothing to do with their physical durability [...]. Services cannot be put into stock because a stock of changes is a contradiction in terms. Thus, the fact that services cannot be held in a stock is not a physical impossibility, but a logical impossibility.

Since the production of goods is an autonomous transformation by the provider, it can be carried out regardless of an existing demand (Lovelock, 1983). As mentioned this is different for services. In fact, this is the reason for the restricted possibilities of stockpiling since only facilities, such as taxis or aircrafts, can be stockpiled or held for disposal. Consequently, since service providers are dependent on customer resources, the capacity represented in the facilities is perishable. If there are no customer resources available, the potential capacity to perform a transformation on them perishes.

Bearing this in mind, critique regarding this characteristic can be clarified. We are in accord with Gummesson (2000) who points out that an ATM is a store of cash withdrawals and a hotel is a store of beds. All aspects he specifies are storable. The potential to be of value, however, perishes if there is no customer demand for cash or hotel beds. So the potential capacity to provide service perishes (Lovelock, 1983). We find further support for this assumption by Rust *et al.* (1996) who affirm: "Time is the most perishable component of services capacity".

Figure 3 gives an overview of the above illustrated findings which particularize the IHIP characteristics. It illustrates that the IHIP characteristics of services are suitable if they are clearly applied to certain points of reference and not to the single entity of services.

Implications for services marketing

Many scholars argue that the distinction between services and goods based on the IHIP is deeply flawed since the customer does not make a difference between the two (e.g. Vargo and

Lusch, 2004; Lovelock and Gummesson, 2004). In a later article Gummesson (2007) states:

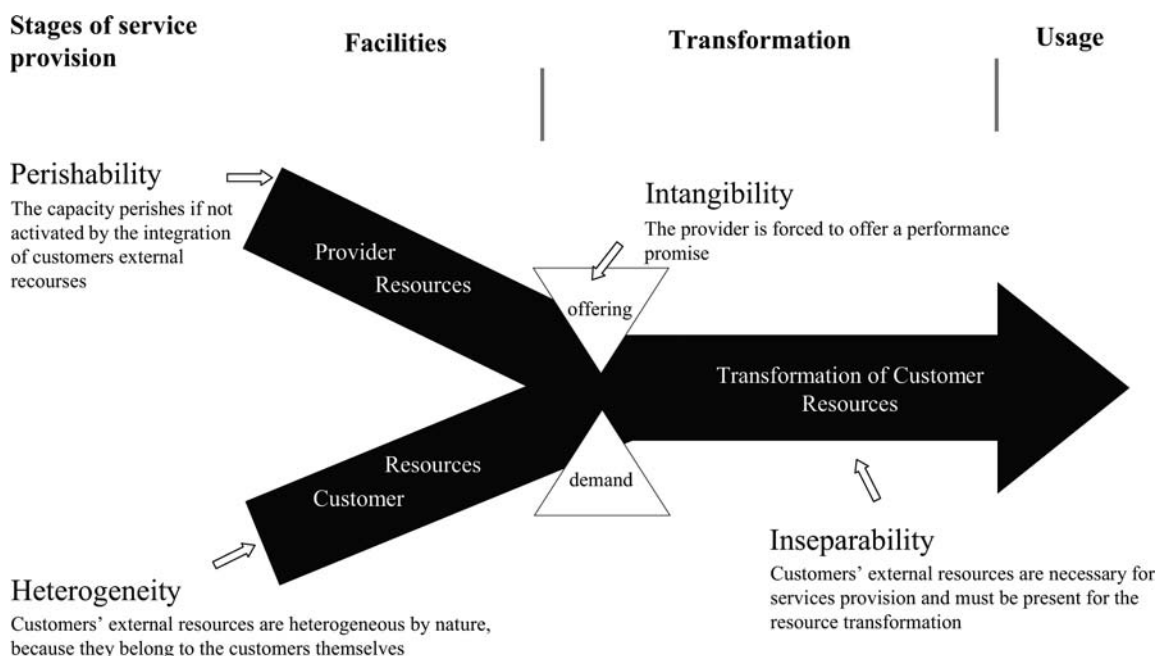
... buying a car is classified as the outcome of goods marketing, renting a car as the outcome of services marketing. For each customer, however, value is created in his or her interaction with the car. It is driving to a desired destination... [...]. The car remains a value proposition whether it is driver owned, owned by your employer, bought with borrowed money, leased, rented or owned by your parents.

Taking on the perspective of the customer we agree that a distinction between services and goods might be of little value.

As marketing scholars we also need to focus on the implementation of different offerings. For implementation and thus the interaction and relationship with the customer producing a car or offering a rental car service makes a substantial difference. Therefore, we believe the distinction and with it the characteristics of services and goods are still necessary. Authors have been right in criticizing the IHIP characteristics assigned to services as a single entity because numerous exceptions occur in reality. We have contradicted this dispraise, however, by more closely examining the characteristics and by determining their appropriate suitability to certain aspects of service provision.

The FTU framework allows IHIP to be assigned to a specific aspect of services and not to services as a single entity. These findings enhance services marketing because scientific exchange and advancement requires sound definitions and characterizations of its underlying terms. We aimed to contribute to services marketing literature because with others we believe that each of the IHIP characteristics has an ongoing potential to inform research and practice (Edvardsson *et al.*, 2005; Lovelock and Gummesson, 2004). Apart from contributing to the discipline of services marketing by investigating into definition and characteristics of the basic terms, our results deliver a theoretical foundation for many empirical findings and put emphasis on different areas of research important for implementing services.

Figure 3 Customer integration approach to characterize services



Intangibility has been assigned to the services offering because of the restriction in selling them as future performance. Related research areas in services marketing can be developed. The literature assumes that intangibility has an effect on consumer behavior, especially on buying behavior (Zeithaml *et al.*, 2006). When buying services, the uncertainty of the buying decision is therefore assumed to be higher than deciding on already completed transformations leading to goods, which can be tested and returned (Bateson, 1995; Mitchell and Greatorex, 1993; Shostack, 1977). Assigning intangibility to the offering and not to the facilities or outcome gives a theoretical foundation for such findings in consumer behavior. This aspect is worth further investigation. Since the service offering is intangible in the moment of the buying decision, providers will attempt to reduce its uncertainty. Thus, we encourage research in the area of service guarantees (e.g. McCollough and Gremler, 2004) or third party evaluation and word of mouth (Dean and Lang, 2008). We state that services are offered as intangible future performances. This draws our attention to the importance of the servicescape including all visible elements within the “facilities”.

We recommend that research and management focus on the heterogeneity of customer resources as the origin instead of its consequences, such as the heterogeneity of the outcome. Managing such input heterogeneity can be approached by segmenting the market, for example. Language schools assess prior knowledge of the participants and aim to build homogenous groups in terms of language skills in order to provide the best service provision possible. Thus, access to services can be restricted as well. A restaurant or holiday resort configures an offer in a way that will attract a certain type of guest. For example, tour operators specialized on senior citizens try to reduce the heterogeneity of customer resources to enhance perceived quality. We believe that the heterogeneity of customer resources is often the cause of the heterogeneity of an outcome. This may explain why heterogeneity has received a great deal of attention especially in literature on service quality. In contrast to provider resources, the heterogeneity of customer resources will always be present in services, used either as an opportunity or viewed as an impediment.

Depending on the type of customer resources, inseparability has implications for capacity management. Capacity constraints are usually higher if human beings serve as resources to be transformed, as opposed to objects or, even more obvious, information. It will usually be easier to temporarily stockpile objects or data to be transformed than to make customers wait for service delivery. A surgeon or a hairdresser performs transformation on persons. In this case customers need to be present during the transformation, and providers need to be considerate with customers' time. If objects are the customer resource which is to be transformed, e.g. car repairs or cleaning services, service providers as well as customers will usually be more flexible, because customers do not need to be present during the process. An attorney can usually act even more flexibly with his legal cases in terms of time and place because those cases are based on information as the customer resource.

Assigning perishability to the service provider's capacity, within their facilities, has implications for services marketing. Perishability of customer resources can be managed with yield and price management. Elaborate reservation systems coupled with price discrimination as utilized by many

airlines are useful instruments to reduce the perishability of capacity in advance. If a reservation system is hard to implement, we have shown that the service provider can usually be more flexible if the customer resources are data or objects, rather than persons. As such, the problem of perishability of the service provider's capacity to deliver services can usually be more easily overcome when transforming data or objects instead of customers.

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Executive summary and implications for managers and executives

This summary has been provided to allow managers and executives a rapid appreciation of the content of this article. Those with a particular interest in the topic covered may then read the article in toto to take advantage of the more comprehensive description of the research undertaken and its results to get the full benefits of the material present.

When doubts are cast on perceived wisdom, when long-cherished definitions and assertions are challenged and when assumptions we feel comfortable with are labelled unreliable, the time has come to defend or replace them. The characteristics of intangibility, heterogeneity, inseparability, perishability (IHIP) that have been regularly applied to services have been subjected to substantial criticism, as more and more exceptions occur.

The reasons for the criticism are twofold. The focus of services marketing has changed and the development of information and communication technology has advanced dramatically. The initial conception of services marketing research looked predominantly at personal services or low-tech, high-touch services. With this services marketing focus, the dichotomous view of manufactured tangible goods and intangible, heterogeneous, inseparable and perishable services was not such a matter of controversy. More and more changes in general conditions, especially in the development of technology, increasingly water down the applicability of most of the IHIP characteristics of services.

Today, the inseparability of production and consumption, as well as the perishability of services, can often be overcome by technology-based communications, for example interactive, web-based lectures in distance learning. It is therefore not astonishing that dissatisfaction with the IHIP paradigm has grown over the years with this shifting focus and technology development.

Rather than pursuing the path of finding and establishing new characteristics for services and abandoning the old ones, in "Characteristics of services – a new approach uncovers their value" Sabine Moeller takes a more trenchant look at the IHIP characteristics to develop a framework identifying situations in which they apply. Professor Moeller's view is that it is not the characteristics that are unsuitable, but their point of reference: services as a single entity. The study is based on the FTU framework with its three stages of service provision (facilities, transformation and usage) and allows a clear identification of the point of reference of the IHIP characteristic because each is valid and useful in regard to a particular stage or corresponding resources.

For example, it has been previously argued that buying a car is classified as the outcome of goods marketing, renting a car as the outcome of services marketing. For each customer, however, value is created in his or her interaction with the car.

The car remains a value proposition whether it is driver-owned, owned by an employer, bought with borrowed money, leased, rented or owned by someone else. From the customer's point of view a distinction here between services and goods might be of little value.

Critics of IHIP characteristics assigned to services as a single entity have been correct because numerous exceptions occur in reality. The FTU framework allows IHIP to be assigned to a specific aspect of services and not to services as a single entity.

Intangibility is criticized because there are usually many tangible objects involved in a service performance – an aircraft, food, staff. However, the change or transformation of the customers' resources (and not the resources themselves) can be perceived as intangible. In other words, although tangible actions are often included, the service performance itself is basically intangible.

Heterogeneity is criticized because of the countless possibilities of standardization of services (a bank's ATM, for instance). Language schools assess prior knowledge of the participants and aim to build homogenous groups in terms of language skills in order to provide the best service provision possible. A restaurant or holiday resort configures an offer in a way that will attract a certain type of guest. For example, tour operators specialized on senior citizens try to reduce the heterogeneity of customer resources to enhance perceived quality. In contrast to provider resources, the heterogeneity of customer resources will always be present in services, used either as an opportunity or viewed as an impediment.

Inseparability has implications for capacity management. Capacity constraints are usually higher if human beings serve as resources to be transformed, as opposed to objects or, even more obvious, information. It will usually be easier to temporarily stockpile objects or data to be transformed than to make customers wait for service delivery. A surgeon or a hairdresser performs transformation on persons. Customers need to be present during the transformation, and providers need to be considerate with customers' time. If objects are the customer resource which is to be transformed, e.g. car repairs or cleaning services, service providers as well as customers will usually be more flexible, because customers do not need to be present during the process.

Assigning perishability to the service provider's capacity, within their facilities, has implications for services marketing. Perishability of customer resources can be managed with yield and price management. Elaborate reservation systems coupled with price discrimination as utilized by many airlines are useful instruments to reduce the perishability of capacity in advance.

(A précis of the article "Characteristics of services – a new approach uncovers their value". Supplied by Marketing Consultants for Emerald.)