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**PRODUCTIZING PROFESSIONAL CONSULTANCY SERVICES
MODULARLY THROUGH SERVICE BLUEPRINTING: CASE QPR
SOFTWARE**

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ABSTRACT

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Services are getting more complex and difficult to manage, but much less attention and resources are directed towards service development than product development both in literature and business life. The paper sheds light on how productization together with modularization and service blueprinting would help make consultancy services more manageable, scalable and efficient while retaining their customer focus.

The research was qualitative and based on active research and participant observation. A theoretical framework was constructed on the basis of relevant literature and was then evaluated in two steps: first the overall framework was evaluated by mirroring it to a real life case at QPR Software. Then a service blueprint was created of a selected service, and its benefits and challenges were evaluated. The framework reflected the case company's situation well. Service blueprinting proved to be a valuable tool for facilitating discussion and knowledge sharing.

The characteristics of consultancy services provide many challenges for productization. They are highly heterogeneous and people-centric whereas productization is based on standardizing the offering, the delivery processes and managing the service's tangible properties. The research indicated that by modularizing services, both customer focus and standardization can be achieved by creating variety.

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Palveluiden merkitys korostuu jatkuvasti, mutta sekä kirjallisuudessa että liiketoimintaympäristössä niiden kehitykseen panostetaan perinteisiä tuotteita vähemmän. Tässä pro gradussa tutkittiin, voiko tuotteistamisen, service blueprintingin ja modularisoinnin avulla konsultointipalveluista kehittää paremmin skaalautuvia, tehokkaita ja helpommin johdettavia siten, että asiakasnäkökulma säilyy niiden tuottamisessa.

Tutkimus oli kvalitatiivinen ja perustui osallistuvaan havainnointiin ja aktiiviseen tutkimustapaan. Teoreettinen viitekehys rakennettiin kirjallisuuden pohjalta, ja sitä verrattiin aluksi case-organisaation tilanteeseen. Tämän jälkeen valitusta palvelumoduulista luotiin service blueprint, jonka hyötyjä ja haasteita arvioitiin. Viitekehys peilasi yrityksen palvelutuotekehitystä hyvin. Service blueprintingin suurimmat edut olivat keskustelun ja tiedon jakamisen fasilitointi.

Konsultaatiopalveluiden ominaisuudet ovat haasteellisia tuotteistamisen kannalta. Ne ovat hyvin heterogeenisiä ja yksilökeskeisiä, kun taas tuotteistaminen perustuu tarjoaman ja prosessien standardisointiin sekä palvelun fyysisten ilmentymien hallintaan. Tutkimuksessa havaittiin, että modularisoinnin avulla asiakkaan vaatimat räätälöinnit voidaan toteuttaa vakioituilla kokonaisuuksilla valinnanvaraa luomalla.

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1 INTRODUCTION

Productization is a term that is rather ubiquitous, yet it lacks a clear definition (Kurvinen, 2008; Holma, 1998; Sipilä, 1996). The idea of researching it further was raised by a real-life situation. The case company is slowly transferring its business from software sales to services. At the company some see productization as a panacea for all problems related to selling, buying and delivering services while some see it as an inconceivable effort especially in the context of consultancy services.

This research paper tries to shed some light on what productization means in practice and how consultancy services could be productized. The thesis consists of five chapters. In this first chapter the background of the study, research problems and objectives, research methodology, literature review, delimitations and the structure of the thesis are presented.

1.1 Background of the study

While the development of services has long been considered by scholars and managers as an important competitive concern in many service industries, it has remained as one of the least understood topics in the service management and innovations literature (Menor et al., 2002). The critical role of innovation has long been recognized in manufacturing firms. However, the development of innovative services has received much less attention. Research on how new services are developed remains fragmented and much less developed than for products (Drazin and Schoonhoven, 1996; Sundbo, 1997; Johne and Storey, 1998; Menor et al., 2002). New service failure rate is high (Cooper and Edgett, 1996) caused by the lack of an efficient development process and up-front homework (for example de Brentani 1991, Drew 1995, Edgett 1994).

At the same time the significance of service production in terms of gross domestic product has been steadily increasing for decades. In the 1950's around half of Finland's GDP came from services and in the year 2010 the number was close to 70%. The growth of service production can mostly be attributed to the private sector, as the percentage of public service production of the GDP has remained relatively stable. (Elinkeinoelämän keskusliitto, 2012) Also in other developed nations the service sector accounts for more than 60% of GDP In the U.S it contributes up to 80% and 72% in the UK (Goffin and Mitchell, 2005; Junarsin, 2010).

While the service sector's contribution to the GDP of many countries is major, the R&D expenditures aren't. In the US the R&D expenditures for service sector are only 24% and just 14% in the UK (Junarsin, 2010). This signals that services simply aren't yet seen as something that can be actively developed like physical products can.

This global shift in focus towards service production rather than manufacturing has exposed companies who provide services to new high levels of competition (Geum et al. 2012), which in turn puts greater pressure on them to innovate new services as well as deliver existing services at higher quality (Meyer & DeTore, 2001) and "the importance of adopting a new strategy to build competitive advantages in services sectors has become widely recognized" (Geum et al., 2012, p. 579).

This, in turn, leads to services getting more complex and extensive. They are also often offered by a bundle of service providers instead of just one. Because of the extensive nature of these new services business customers have started to demand individualized services. This then presents challenges in managing the service production effectively as the needs and demands are more and more scattered. In a highly competitive market standardized offerings are needed (Lampel and Mintzberg, 1996). A fundamental change in the role of services is illuminated by the fact that they are now seen as

core customer offerings and not only as additions to physical goods (Geum et al. 2012).

To tackle these challenges, authors have suggested various approaches to service design, such as service engineering (Bullinger, 1995; Mandelbaum, 1998) and service blueprinting (Shostack 1984, 1987) to help gain efficiency in service production, modularity to gain variety and customization for specific customer needs and productization to bundle a complete service into a package that is comparatively easy to sell, buy and deliver. While service design as a concept was first introduced already in the 70's by authors such as Levitt (see e.g. 1972, 1981) and has gained some traction, it hasn't been in the limelight as much as many other aspects of service marketing. The concept of modularity is also old, but has focused on industrial applications. Productization is a term used mostly by Finnish scholars and combines many existing concepts, such as process management, industrialization of services and tangibilization—but still lacks an established definition.

To add to this challenge of service management, consultancy services have characteristics that make standardizing and productizing them extremely difficult. These characteristics include people centricity, dependence on individual knowledge and skills, and customer as a co-producer.

1.2 Research problems and objectives

The aim of this research paper is to find out how professional consultancy services can be productized modularly through a service design technique called service blueprinting.

The main research problem is:

How can professional consultancy services be productized modularly through service blueprinting?

To understand how consultancy services can be productized, it's crucial to map out their characteristics in contrast to other services. Therefore the first sub-problem is:

How do the characteristics of professional consultancy services affect their productization?

Secondly, the main benefits and challenges of using service blueprinting as a tool for productizing are evaluated in the empirical part of the study. The second sub-problem is:

What are the main benefits and challenges of using service blueprinting as a tool for productization?

1.3 Research methodology

If the research situation involves people reflecting and improving their own work by integrating reflection and action; people making their experiences public; participants gathering data themselves and collaboration among members of the group, the method can be described as action research (Zuber-Skerritt, 1992). Vinten (1994) gives an exhaustive list of reasons why any research should be done qualitatively. Of those, a number of reasons apply especially to this study: the issue was complex in definition and scope, organizational structure and feedback mechanisms were looked at, motives behind decisions were found out, participants were involved in a creative process towards new design and an understanding of informal processes was gained. In addition, due to the implicit nature of the source material within the case company a qualitative approach was deemed best. The research can also be seen as a participatory case study, as its author was involved in the case throughout the process from inception to collecting the findings. (Mills et al. 2010)

A framework for conducting the case study was initially formed based on relevant literature about productization, service blueprinting, modularization and consulting services. No prior theory that combines all these elements could be found in the existing literature. As the main research question is to find out whether merging these elements is possible, the first task was to try and combine the elements into a coherent framework.

The framework was then used as the basis for the case study, whose main purpose was to apply the theories into practice within the case firm. The case company's objective was to carry out a feasibility study in order to find out whether it would be possible and sensible to carry out the act of productization based on service blueprinting on a wider scale.

This method follows the characteristics of action research from the scientific-technical view of problem solving. In this approach the goal of the researcher is to test a pre-specified theoretical framework on a particular "intervention", according to Masters (1995). The researcher first identifies the problem and then involves the practitioner. In this research paper the roles are conducted by the same person, the researcher.

The method of participant observation means that the researcher is physically present in the field and often doesn't know beforehand which questions will be answered. Therefore the researcher must be present in the environment for the research material to be valid (Anttila, 2006). Participant observation can involve different amounts of participation. This can be depicted in a continuum where on the one end lies observation, and on the other, participation (Vinten, 1994).

In this study, two variations of this method are used in the empirical research: moderate participation and complete participation. According to DeWalt & DeWalt (2002), the researcher maintains a balance between insider and outsider roles, which allows for limited involvement while

allowing for the researcher to remain objective. This method was chosen for the phase where the complete theoretical was evaluated in the case company. In complete participation the researcher is integrated into the group that is being studied (DeWalt & DeWalt, 2002) and this method was chosen for creating the service blueprint and evaluating its benefits and challenges. It's understood and accepted that the author's subjective role as an employee and a researcher in the case study affects the results and findings. This also allows for in-depth analysis of the underlying reasons and assumptions made in the company about the topic as the access for tacit and internal knowledge could be accessed by the author. This would have not been otherwise possible. The value of this approach is verified by a number of studies (e.g. Beynon, 1988; Vinten, 1992) as an outsider would never get access to the underlying knowledge and assumptions in an organization.

Data was collected through participating and non-participating observation. Written and non-written reports, such as QPR's own process mappings, quarterly reports, internal documentation and guidelines were thoroughly analyzed. Also, three semi-structured interviews with key personnel in the case company were conducted during December 2012. The interviews were informal and the questions varied slightly between them. The question structure can be found in Appendix 1. The research was carried out in parallel with the author's everyday work and the case is a real life project within the company and part of the company's productization efforts that were on-going at the time.

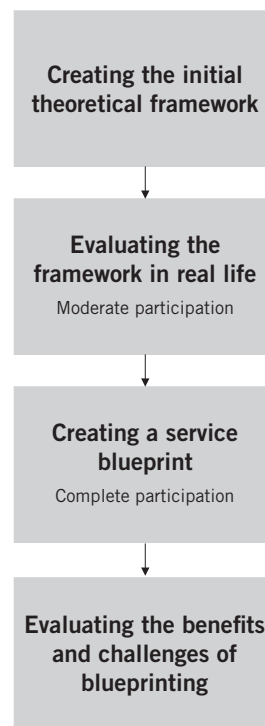


Figure 1. The research process and methodology.

As discussed, the empirical part of the study is two-fold: first the theoretical framework was evaluated in practice. After that the concept of service blueprinting was tested on a service module identified in the case company and its benefits and challenges were evaluated.

1.4 Literature review

This research studies the concepts of productization, modularization and service blueprinting. In this chapter the terms and the key contributors are presented, but more detailed discussion can be found later on in the paper.

Productization is a term mostly used by Finnish academics such as Sipilä (1996) and management consultants such as Parantainen (2007) and isn't very well established in literature. Some research related to productizing has focused on the service development in general (e.g. Kurvinen, 2008; Holma, 1998; Sipilä, 1996) while some see the main benefits being in process

standardization (Suominen et al. 2009). Usually productization is defined as an act of refining a service into a concrete and a commercial entity (Kurvinen, 2008; Holma, 1998; Sipilä, 1996; Parantainen 2007). Suddaby and Greenwood (2001) see productization referring to a method in which abstract knowledge is transferred into saleable products.

Modularity research literature has traditionally focused on products and product design (Fixson, 2006; Campagnolo and Camuffo, 2010). The concept of service modularization was first introduced by Sundbo (1994), who proposed both its feasibility and its potential advantages, but as Pekkarinen & Ulkuniemi (2008) say, the inherent difficulty in modeling services has meant that there has been little research in the area. Baldwin and Clark's (1997) definition of the term is used frequently. According to them, modules are small subsystems that can be designed independently but function together as a whole as a product.

Service blueprinting was introduced by Shostack (1982, 1984, 1987) and is the most well-known model in the service development context. The method was developed further by Kingman-Brundage (Kingman-Brundage, 1989, 1993) to visualize service processes (Fließ & Kleinaltenkamp, 2004). Prior to that Levitt (see e.g. 1972 and 1981) introduced some poignant ideas related to service design and more recently Bitner (see e.g. 2008) has contributed to the research.

1.5 Definitions and key concepts

In this chapter the key concepts of the thesis will be explained in brief.

Productization

Productization refers to the development of services, tools and solutions offered to any customer that are refined into a saleable, marketable and deliverable service product. The act of productization

is to modify something to become a commercial product. (Kurvinen, 2008; Holma, 1998; Sipilä, 1996; Parantainen, 2007)

In the context of consulting services, productization refers to a method in which abstract knowledge is transferred into saleable products (Suddaby and Greenwood, 2001). From the operations' side, the goal is to improve efficiency (Simula et al., 2008), whereas from the marketing side the goal is to define a product in a way that it's understandable prior to purchase so as to simplify the sales process (Suominen et al., 2009). One way to achieve efficiency is to “generalize” the expertise of individuals, so that it's not employee specific and can be re-used (Jaakkola, 2011).

In this research productization will be divided into three dimensions as suggested by Jaakkola (2011): standardizing the offering, systemizing and standardizing processes and tangibilizing the offering.

Modularization

Modularization means dividing a product (either a physical product or a service) into smaller parts in order to gain variety and standardization simultaneously thus providing the customer more options while retaining the quality standards. Its roots are in physical product design (Fixson, 2006; Campagnolo and Camuffo, 2010). By Baldwin and Clark's (1997) popular definition modules are small subsystems that can be designed independently but function together as a whole as a product. The concept of service modularization was first introduced by Sundbo (1994).

Service blueprinting

A service blueprint is a visual representation of a service ensuring that the different people involved in providing it can understand and deal

with it objectively regardless of their roles or their individual point of view (Zeithaml & Bitner, 2000). Service blueprint consists of five components: customer actions, visible contact employee actions, invisible contact employee actions, support processes and physical evidence and each of these areas are separated by a line of interaction, a line of visibility, a line of internal interaction, and a line of implementation respectively (Shostack 1984, 1987; Bitner et al., 2008; Lovelock, 1992). Compared to other modeling techniques, service blueprinting is customer focused. (Bitner et al., 2008)

Tangibilization

Service tangibilization is typically associated with bringing concrete elements to intangible services and the aim is to reduce their abstractedness and ambiguity (Shostack, 1977; Levitt, 1981; Sempels, 2002; Jaakkola, 2011). The goal is “to create simple, tangible offerings that are easy to grasp” (Jaakkola, 2011, p. 224). In that way the customer feels he’s getting something concrete even when the core product might be an intangible service.

KIBS

Knowledge intensive business services (KIBS) are services that rely heavily upon professional knowledge; are either primarily sources of information and knowledge or services that augment customer’s own information and knowledge; and the main clients are other businesses. Consultancy services can be considered to be KIBS. (Miles et al., 1995; Toivonen, 2004)

1.6 Theoretical framework

The starting point for creating the theoretical framework for this research was challenging. The concepts of productization, modularization and service

blueprinting are seemingly connected but merging them into a coherent framework proved to be difficult. The framework combines the elements of productization as defined by Jaakkola (2011), a modular structure of a service portfolio as originally suggested by Sundbo (1994), and the components of a service blueprint as developed by Shostack (1984, 1987).

Phases of modular productization through service blueprinting

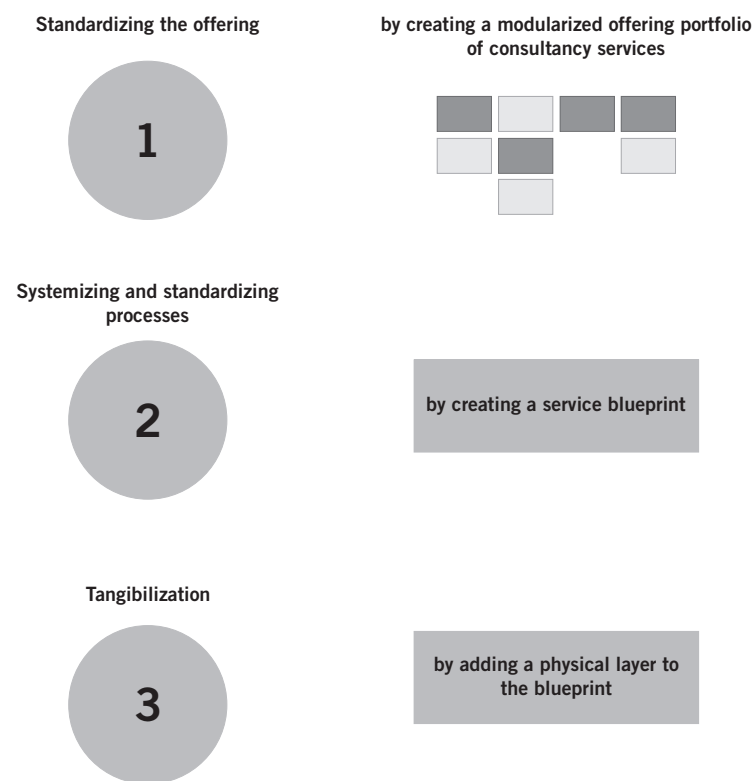


Figure 2. Theoretical framework.

In this framework, the first phase of productizing, standardizing the offering, is achieved through the means of mapping and specifying the service portfolio and by modularizing it to manageable entities. The second phase of productization, systemizing and standardizing processes, is carried out according to the service blueprinting framework and finally the third phase, tangibilization, is considered to be an equivalent for the physical layer of a service blueprint.

1.7 Delimitations

While productization and service blueprinting are discussed in fairly general terms, the case study is limited to consultancy services. The findings from the case can therefore only be applied to professional knowledge intensive business services that share characteristics with consultancy services. As the study is a single case study, applying its findings to other service productization studies might be problematic. While the theoretical framework of the can be applied to the productization of any service, the case study is limited to consultancy services, which present many challenges and can be considered as a special case under the umbrella of productization. For further research applying the framework for more homogenous services would be interesting.

In the theoretical framework the first phase of productization is defined as the point where a company's service offering is mapped and divided into manageable modules. This work was on-going in the case company, and could not be taken into consideration in the paper. A single module was therefore identified and was then used as the basis for the service blueprint constructed in the case study.

The research of professional consultancy services indicates that they are highly focused on individuals, very heterogenic and customer input plays a significant role in delivering them. However, due to resource limitations while conducting this research, no first hand customer interviews were made. This would probably be a fruitful avenue of research in the future. It should also be noted that important findings in regards to QPR's customers' opinions of the company's services were made in the LEAPS study conducted by Aalto University researchers. Some of these findings were used in this study.

In this paper productization is viewed as a separate and a complete entity. This couldn't, however, be further from reality as both customer input and the company's strategy in addition to a cornucopia of external factors affect the productization and development of services. Productization of services isn't a project; it's an on-going cycle. This is not reflected in the theoretical framework of the paper, but its importance is understood and the cyclical nature of service development is knowingly excluded from the framework and the research due to limited resources.

1.8 Structure of the thesis

The research paper is divided into two parts, theoretical and empirical. First, the theoretical aspects of productization, modularization and service blueprinting are discussed in the context of consultancy services. Then these findings are applied into practice in a case study conducted for QPR Software Plc.

2 PRODUCTIZING PROFESSIONAL CONSULTANT SERVICES MODULARLY

In this chapter the characteristics of professional consultant services, the concept of productization and finally modularization are discussed.

2.1 Service characteristics and productization

Services are usually characterized by intangibility, heterogeneity, perishability and inseparability of production and consumption (Grönroos, 1990; Parasuraman et al., 1985; Zeithaml et al., 1985). Judd (1964) defined services as transactions where the object of exchange isn't a physical commodity. A central theme in service studies is their complexity as opposed to physical products (Brown et al., 1994). Another important aspect of services is that they are processes and are produced and consumed over time (Grönroos, 1998). Gummesson (2002, p. 586) notes: "in services, customer-supplier interaction and relationships in the service encounter stands out as the most distinctive feature separating them from goods."

Service processes only take place with the customer (Fließ & Kleinaltenkamp, 2004; Grönroos, 1990; Hoffman and Bateson, 1997; Kurtz and Clow, 1998; Zeithaml and Bitner, 2000) and some service processes need the customer present at all times, or during some phases of the operations. As a co-producer (Cowell, 1984; Edvardsson et al. 1994) or a "partial" employee (Bateson, 1985; Schneider and Bowen, 1983; Kelley et al., 1992), the customer may take an active role in the service operation. Concepts like self-service restaurants and photo booths are good examples of this. Because of the active role of customers in service processes, the competence of the customer influences the service's performance and the usefulness to the customer (Hyötyläinen and Möller 2007; Grönroos, 1998).

While the characteristics of services are well-established, they have also received criticism. In the 1970's Levitt (1972) argued that there is no service industry, but that there only industries whose service components play a more significant role than others'. His view was that the development of services shouldn't be regarded any differently from normal products', but rather services should be "industrialized" by manufacturing techniques. He argues that industrialization of services can be done by focusing in the activities in producing services and re-engineering them to make service production more efficient. Many authors share Levitt's view that traditional boundaries between manufacturing and services are becoming obsolete (e.g. Gann and Salter, 2003; Drejer, 2004). Johnston (1994) and Bowen and Youngdahl (1998) also agree with Levitt and argue that service management can learn from operations management in manufacturing.

Edvardsson et al. (2005) in their study came to the conclusion that the IHIP (intangibility, heterogeneity, inseparability and perishability) have to be critically assessed and that they are not as "universal" as they were considered in service literature in the past. For instance Vermeulen and van der Aa (2003) suggested that because physical products can also be heterogeneous and because new services can in fact be developed in advance, heterogeneity and perishability don't have such a big impact on the service development as previously thought.

Intangibility has been criticized because there are usually many tangible objects involved in a services performance (Shostack, 1977). Heterogeneity has been criticized because service processes can be standardized in "countless possibilities" which reduces heterogeneity (Lovelock and Gummesson, 2004).

Inseparability has also been criticized: services simply aren't always consumed and produced together and simultaneously with the customer. For instance transporting services are usually performed in the customer's

absence (Lovelock and Gummesson, 2004, p. 29). Also, as Levitt eloquently explains, many aspects of services can be pre-produced, such as the meat patties used for hamburgers. He explains that by making components used in service production before the actual consumption the whole process can be made much more efficient (Levitt, 1972).

Furthermore, services can in fact be stored which questions the claim that services are perishable. As Gummesson (2000) writes, services are stored in systems, buildings, machines, knowledge and people. He says that the ATM is a store of standardized cash withdrawal, the emergency clinic is a store of skilled people, equipment and procedures and the hotel is a store of rooms.

These criticisms actually lay the foundation for service development frameworks such as service blueprinting. If services were completely intangible, there would be no physical manifestation of them as suggested by the service blueprinting framework. If services were completely heterogenic the processes would be impossible to standardize. If the producer and the consumer were completely inseparable in service production, the back-end functions would be irrelevant. If services were completely perishable, gaining cost-efficiency by pre-manufacturing or reusing materials, such as service brochures, would also be impossible.

2.2 The characteristics of consultant services

Management consultancy has been developing in parallel with management itself since the days when management was separated from ownership. The early management and management consulting focused on measurement and accountancy as famously portrayed by Frederick W. Taylor who clocked each worker and their tasks. Those early pioneers, however, considered themselves as industrial engineers rather than consultants. (Toivonen, 2004)

The use of management consulting has increased significantly since the 1990's (FEACO, 2003; Greiner and Poulfelt, 2005). In many organizations, "management and other kinds of consultants have become part of everyday organizational life" (Werr & Perner, 2007 p. 98). Consultants are generally, however, hired in critical situations where "the consequences of failure may be substantial" (Werr & Perner, 2007 p. 98) and the stakes are high (Mitchell, 1994; Smeltzer and Ogden, 2002).

Gummesson (1978) defines management consultants, technical engineers, architects, accountants and advertising professionals as all providers of professional services. Consulting has clearly been recognized as a professional service. Halinen (1997, p. 29) defines the characteristics of professional services as intangibility, people intensity, interactivity, customization and ambiguity. These characteristics make selling, buying and delivering professional services more difficult as the service is often co-produced with the customer; they focus strongly on the individuals and are very heterogenic. Sipilä (1996) adds that creativity and knowledge are the key differentiating aspects of consultancy services from others. Gummesson (1978) and Bloom (1984) define consulting services as a subset of professional services. Lipiäinen (2000) says that consulting is characterized as total commitment to develop the customers' business.

Turner (1982) suggests that the most important thing in consulting is a well-defined hierarchy of goals and that those goals should be a result of a tight co-operation between the consultant and the customer. He adds that the goals should be agreed on by both parties. Bebko (2000) sees this as part of managing customer expectations. This is also supported by Kesner and Fowler (1997) whose study reveals that if the goals were set without the customer's knowledge there were "disastrous implications" due to the consultants and customer having very differing understandings of the goals.

Services can be divided into two categories: equipment based such as automatic telephone exchanges and people based such as consulting services. This division affects both the development and the consumption of these services as the level of involvement from the supplier's part varies (Levitt 1978). High levels of customer participation in consultancy service delivery can cause high demands on the service process management. Missing, delayed or unqualified customer inputs can induce costs, stretch the amount of time needed and influence the tasks the supplier is carrying out (Zeithaml and Bitner, 2000). Delayed customer contributions can cause bottlenecks and capacity problems and lead to an overall delay of service delivering (Hoffman and Bateson, 1997; Kurtz and Clow, 1998; Mudie and Cottam, 1999). Delayed and unqualified customer contributions can additionally cause greater costs, for example when new information is needed or the existing information has to be iterated (Mudie and Cottam, 1999).

Bitner et al. (2008) say that a professional consulting service consists of events that happen between business partners. Those events include learning about each other, agreeing to the service delivery, meetings and deadline and deliverable definitions. Those events can take a long time or a short time but, as they suggest, the entire sequence should be coordinated and the steps producing customer value should be emphasized.

2.3 Knowledge-intensive business services

It is said that the key resource in modern economy is knowledge and even more important is the ability to create new knowledge. This creation of new knowledge is often defined as learning which is linked to innovation. The concepts of "knowledge economy" and "learning economy" crystallize these ideas. (Boden and Miles 2000; Toivonen, 2004)

The term knowledge-intensive business services, or KIBS, was coined in the mid 1990's and was first used by Miles et al. The key word in the term is "intensive", which refers to knowledge actually been created during the process rather than just transferring existing knowledge. (Toivonen, 2004; Miles et al. 1995). Knowledge intensive services in business-to-business environments differ significantly from services focusing on individuals and consumer markets (Ojanen, 2007). Management consultancy can be considered to be KIBS (Hermelin 1997; Strambach 2001; Toivonen, 2004)

In their definition of KIBS created Miles et al. (1995) stated that they understand KIBS as services that:

- rely heavily upon professional knowledge. Thus their employment structures are heavily weighted towards scientists, engineers, and experts of all types.
- either supply products which are themselves primarily sources of information and knowledge to their users (e.g. measurements, reports, training, consultancy), or use their knowledge to produce services which are intermediate inputs to their client's own
- have as their main clients other businesses (including public services and the self-employed).

Knowledge-intensive services are often customized to the specific needs of the customer. This happens due to the belief that customization adds value to the service in the customer's mind (Petersen and Poulfelt, 2002). In order to receive customization to the services the customer sometimes wants to be more involved in the service process (Fließ & Kleinaltenkamp, 2004; Lovelock, 1990). Other times the customer might not want to participate as the service has been purchased in because of lack of time, skills and/or knowledge (Collier, 1987; Fließ & Kleinaltenkamp, 2004).

Gomes and Dahab (2010) suggest that creating high quality services and demonstrating responsiveness to the customer's requirements and expectations is key. Rahikka et al. (2011) continue that in professional services value is derived from both the service process and the actual outcome of the service. Comparing this to other services, especially those that are equipment based, the contrast is stark: the process matters as much, if not more, than the outcome. When buying a cleaning service, for example, the customer rarely puts much emphasis on which detergent is used—only the end result matters.

A prominent characteristic of KIBS is their people-centricity. Mitchell (1994) says that the outcome of professional services is based on the skills specific people and different professionals have different working patterns, styles, knowledge and ways to handle client relationships. Thus “there is an immense focus on the individual consultant as the major factor in the quality of the service” (Mitchell, 1994 p. 325). Because of this, there is always a risk to buy consultancy services, as the quality cannot be completely ensured to remain homogenous.

The people-centricity of KIBS affects the buying patterns for the services as well. According to Edvardsson (1990), studies show that systematic search behavior is rare when purchasing consultancy services. He suggests that managers tend to reuse a consultant hired in the past (Edvardsson, 1990). Werr & Perner (2007) mention that experienced buyers purchase the services of individuals in whom they have confidence, not those of consulting companies which would suggest that the individual consultant carries more weight in the decision-making than the company he/she is representing. This clearly reflects the belief that the quality of consultancy services is completely dependent on the individual consultant. Edvardsson (1990, p. 125) actually states that “the buyer is less interested in the service itself and more in the individual service provider/consultant.”

Fährnich et al. (1999) conducted a study with 282 companies and found out that services can be divided into four types based on the level of contact intensity and variety. This highlights that consultancy services, service type D in the figure, are highly contact intensive and highly varied, emphasizing the fact that their standardization is difficult.

Contact intensity	high	Service type C Examples: call center fast food restaurant	Service type D Examples: consulting medical examination
	low	Service type A Examples: teller machine customer self service	Service type B Examples: IT outsourcing service life insurance
		low	high
Variety			

Figure 3. Service typology. (Fährnich et al., 1999)

As discussed previously, there are various reasons for purchasing consultancy services. It is often explained by the managers' personal needs and insecurity (Clark, 1995; Sturdy, 1997). From this point of view consultants are actually selling security for managers as explained by Sturdy (1997). Other reasons for buying consultancy services are solving problems the organization can't solve itself; supplement limited in-house capabilities or resources and to obtain an objective view (Mitchell, 1994). It should also be noted that hiring consultants also requires manpower and can involve notable investments of time, money and personnel. As Mitchell (ibid.) continues, all of this is without any guarantee of a successful outcome.

The first step in a rational purchasing process is defining the need (Schein, 1999; Smeltzer and Ogden, 2002). Managers are, however, often unable to properly define their problem and thus their detailed needs (Werr & Perner, 2007). This, as Ellram et al. (2004) suggest, many professional service agreements are executed without clear specifications as oftentimes the initial understanding of the problem may prove to be limited or completely wrong. Because of this challenge consultancy contracts are generally somewhat informal and emergent where, according to Schein (1988), the trust-based psychological contract is more important than the legal contract. As Ellram et al. (2004) importantly point out, this creates “moral hazards”, opportunities for the consultancy companies to abuse the relationship often largely due to the open-ended pricing systems. To counter-balance this, Mitchell (1994) suggests negotiating “a fixed-price or fixed-ceiling contract which stipulates that the firm will absorb any cost overruns”. Mercer (1981) also points out the importance of meeting an agreed timetable. The vagueness of consultancy agreements in general should, however, present opportunities for companies who can remove the vagueness out of the equation, by means of productization, for example.

Because of the underlying problems and needs are rarely properly identified, providing a clear definition of a consultant service is difficult for both the customer’s and the provider’s perspective (Mitchell, 1994; Ellram et al., 2004). This causes difficulties in evaluating the service afterwards. When the consultancy project has ended the end result and the effects of the consultant’s work are difficult to pinpoint as they may appear with a time lag (Werr & Perner, 2007). The quality of a professional service is a highly subjective matter and this increases the uncertainty in the buyer's decision (Mitchell, 1994). This, again, provides opportunities for consultancy companies who define their offerings and end goals prior to service delivery and thus reducing the risk of ordering such services. As Mitchell (ibid.) points out, the vague or inaccurate nature of the customer’s original problem specification can actually be the reason for their dissatisfaction. To

reduce the feeling of insecurity during prior to purchasing consultancy services, Mitchell (ibid.) suggests providing references of similar customer's with whom the company has worked before.

Table 1. The characteristics of consultancy services that affect their productization.

<p>Many aspects of consultancy services require customer input. If that input is delayed or bad, it can cause bottlenecks and induce greater costs.</p>
<p>Consultancy services are people centric and people intensive Individuals are emphasized sometimes more than the companies in which they work</p>
<p>Services rely on professional creativity and knowledge</p>
<p>The goals of the services should be defined and agreed by both parties This is very difficult and rarely happens</p>
<p>Consultancy services are B2B oriented and customization is highly valued</p>
<p>Consultancy services are actually about providing comfort for managers in supporting their decisions by giving an outsiders view</p>
<p>The quality of consultancy services is highly subjective</p>

In table 1 the aspects of consultancy services that need consideration while productizing them are listed. It's easy to notice that the productization of professional consultancy services is much more complicated than productizing B2C services, such as those of a hamburger restaurant. Whereas the customer need for French fries is all but homogenous the customer needs for consultancy services differ case by case. Whereas the customer of French fries rarely cares who serves the product, the customer of consultancy services sometimes focuses solely on the individual. Whereas the fast food consumer has little to none effect on the quality of the fries, the customer of consultancy services often plays a crucial role in delivering the final service.

These characteristics can be seen both as a problem and an opportunity. Because of the people-centricity the personnel costs of delivering consultancy services are high, the potential benefits of systemizing and automating some of the service processes are huge. Also, because the customer needs and delivery methods are highly inconsistent, however, systemizing them is a great challenge. If successful, though, not only does the cost structure of consultancy services delivery potentially change, the service quality would become more consistent as well and finally the customer experience would become more enjoyable and valuable.

2.4 Dimensions of productization

“So many things go wrong because companies fail to define adequately what they sell”. Levitt (1972, p. 16)

The four cornerstones of service characteristics (intangibility, heterogeneity, inseparability and perishability) present challenges in managing the service process, as well as selling and marketing those services. In addition, the highly individually oriented ambiguous nature of consultant services whose main purpose seems to be to support managers in their time of crisis, as

discussed in the previous chapter, presents both challenges and opportunities when it comes to industrializing, standardizing or even automating some aspects of those services. In this chapter the term productizing and its applications to service production will be discussed.

Service research has been dominated by marketing-oriented approach and studies have tended to concentrate on the demand viewpoint. Taking the role of specification and design of services into account has been largely ignored when assessing the commercial success of service offerings. However, a growing number of authors are realizing that services can and must be systematically planned (e.g. de Brentani, 1995; Ramaswamy, 1996; Cooper and Edgett, 1999; Fitzsimmons and Fitzsimmons, 2000; Bullinger et al. 2003)

The systematic planning of services is made increasingly difficult by the high degree of customization and heterogeneity, which create challenges for the management and marketing of professional services in terms of operational management (Verma, 2000) and in terms of communicating, promoting, and pricing the services (Clemes, Mollenkopf, & Burn, 2000). This is highlighted by the characteristics of consultancy services and KIBS in general, as previously listed: personal contact and expertise is difficult to standardize.

Productization is a term coined by Finnish academics such as Sipilä (1996) and management consultants such as Parantainen (2007). The term refers to the development of services, tools and solutions offered to any customer (Kurvinen, 2008; Holma, 1998; Sipilä, 1996). It can also be applied to product development, but in this paper the focus will be on service development. Sipilä (1996) defines that packaging of professional services includes defining, planning, developing, describing, and producing services so that customers' benefits from the service are maximized while allowing the company's profit requirements to be realized. A product, in turn, is the

entity that the customer sees and buys, or anything that can be offered at market to answer a certain need or want (Rope, 2005; Kotler, 2003). Suominen defines the term as a “standardized process which aims to produce a high quality commercial good or service in the market from produced information” (Hänninen et al. 2012 p. 9).

The term productization isn't well-established or very widely used and has various definitions. The general idea is that instead of buying a technology or an idea, customers want those technologies or ideas in a refined form. The act of productization is to modify something to become a commercial product (Kurvinen, 2008; Holma, 1998; Sipilä, 1996). Parantainen (2007) defines it as the act of refining expertise into a saleable, marketable and deliverable service product. Productization incorporates elements from more globally recognized concepts such as commercialization, industrialization and standardization. According to Suddaby and Greenwood (2001), in knowledge intensive professional services, such as communication consulting services, productization refers to a method in which abstract knowledge is transferred into saleable products.

According to Simula et al. (2008) the aim of productization is to support the communication between marketing and design personnel. They say that the main idea behind productization is to seek means of selling newly developed products profitably and that internally that means matching the offering to the operations to improve efficiency. Marketing-wise, productization means building a more appealing offering. Parantainen (2007) emphasizes that services should be easy to buy and sell and the outcomes and pricing should be communicated well. Suominen et al. (2009) defines the goal of productization being to package an offering, technology or service so that a customer can understand the content of it in advance. One of the underlying reasons for productization is to “generalize” the expertise of individual consultants, so that it's not employee specific (Jaakkola, 2011).

It's worth noting that productizing is not innovation per se, but rather successful productization leads to innovation because it enables knowledge sharing and creation of new knowledge (Nicolajsen & Scupola, 2011). In fact it can be argued that productizing isn't a tool for creating new products at all, but rather refining and improving existing concepts to enhance and streamline selling, buying and delivering of services.

According to Jaakkola et al. (2009) and Lehtinen & Niinimäki (2005) productization starts from the first steps of new product development and can be thought to include the initial research and development processes as well as the marketing and sales processes in the final stages of development. Marketing process includes mapping out customer requirements and during the sales process customers are illuminated as to why they need the product and what the benefits are.

Matanovich (2004) says that in order to be successful service business the firm

1. Is clear about the promises it makes to its customers
2. Invests in people and systems to enable its promises to be kept
3. Measures and rewards performance in keeping promises with customers

As discussed before, while delivering consultancy services the goals should be agreed on together with the customer. This links to the first requirement by Matanovich. These requirements can also be directly linked to the phases of productization. By standardizing the offering, the value propositions, or promises made to the customer, are well defined for each service module. Standardizing and systemizing the processes enables the company to plan its resource allocation and thus facilitates delivering on promises made. And finally a systematic approach for service delivery also allows for measuring performance.

The phases of productization vary among the scholars. Suddaby and Greenwood (2001, p. 938) argue that productization consist of three different stages, which are codification, abstraction and translation. This approach focuses on knowledge. Codification means converting individual knowledge to something that can be stored, moved and reused; abstraction means generalizing this knowledge and translation means interpreting and re-applying the abstracted knowledge to a specific context. (O'Mahoney et al. 2013) The approach is extremely useful from the knowledge sharing point of view, which is highly relevant in the context of developing consultancy services. This is not, however, the main focus of this paper.

Sipilä (1996, p. 13) suggested four phases of productization within a company: 1) productizing the internal work methods, 2) product support for the service, 3) a productized service and 4) a service that can be reproduced and duplicated. The first phase means increasing the operational efficiency through systemizing recurring processes. During the second phase product support is added by means of a computer program that the customer can use, for example. Only during the third phase the service processes become cohesive entities that can be sold to customers as they are. Some amount of customization remains on this stage, however. In the fourth phase services are highly standardized and easy to replicate. At this stage they almost resemble physical products in the way they can be sold and distributed (ibid).

Jaakkola (2011) divides productizing into three different parts: (1) specifying and standardizing the service offering, (2) tangibilizing and concretizing the service offering and professional expertise, and (3) systemizing and standardizing processes and methods. While Sipilä's model focuses on productization from the organizational point of view and Suddaby & Greenwood's model focuses on the knowledge, Jaakkola's division concentrates on the service aspect of productizing on a more concrete level. Therefore this division is used as a basis for the research.

2.4.1 Standardizing the offering

The first phase of productizing, specifying and standardizing the service offering, stems from a problem many companies face: the customers lack a clear understanding of what they need and what the company can offer them. In her study, Jaakkola (2011 p. 224) found out that “in order to facilitate the selling and marketing of the service, its content needs to be standardized at least to some extent”. She discovered that customers expect a clear, well-defined offering. Therefore reducing the variability and ambiguity of the service is vital. She continues that this could be achieved through dividing the service into smaller parts. This is where the concept of modularizing services is highly useful.

Standardizing the processes can be regarded as industrialization of services, as suggested by Levitt (1972). He argues that we see service as “invariably and undeviatingly personal”, by individuals directly for other individuals. He claims that this human-centric view diverts managers from seeking alternatives to the use of people and that it doesn’t allow inventing completely new solutions and redesigning the tasks themselves. He draws an example from McDonald’s where raw hamburger patties are pre-packed and premeasured thus leaving no room for discretion for the individual employee as to the size, quality or consistency of the patty. This in turn makes delivering the food faster, guarantees the quality everywhere and therefore standardizes the customer value.

“Nothing can go wrong—the employee never soils his hands, the floor remains clean, dry, and safe, and the quantity is controlled. Best of all, the customer gets a visibly generous portion with great speed, the employee remains efficient and cheerful, and the general impression is one of extravagantly good service.” (Levitt, 1972 p. 8)

Jaakkola (2011) claims that standardizing can be achieved by dividing the service into smaller parts, as highlighted in the comments by various managers in her study. “Service modules”, “packages”, or a set of “service versions” are some of the ideas those managers mentioned.

“For example, the planning of a certain type of project is sold in four pieces. The customer can buy the extent of the service they want. We can give a fixed price for each piece, so that after each stage of the process, the customer can decide if they want to proceed.” (Jaakkola, 2011 p. 225)

Services can never be entirely standardized because of the differences in customer’s situations (Jaakkola, 2011). This is especially true for consultancy services, as discussed earlier. However, by combining service modules customer specific customization can be achieved by creating variety, as suggested by Sundbo (1994). This will be discussed further later on in the paper.

2.4.2 Systemizing and standardizing processes and methods

“In order to facilitate the selling and marketing of the service, its content needs to be standardized at least to some extent”. Jaakkola (2011 p. 224)

The second component of productization in Jaakkola’s (2011) study is systemizing and standardizing processes and methods. The underlying need for this is to make the service process more controllable by unifying processes, methods and tools and thus increasing effectiveness and eventually profitability. To achieve this, ready-made material, such as templates for offers and contracts, can be used to reduce the time needed for mundane tasks. Another significant motivation for standardization is to

reduce the dependence on single employees and to create company-wide knowledge.

Developing service processes is as crucial and beneficial as developing manufacturing processes and many of the same tools can be applied to improving services. (Levitt, 1972) Without a systematic approach to service development the only way to increase efficiency in producing them is for the people to try harder. To compare this to manufacturing processes: if one wants to improve the manufacturing processes he rarely focuses on the person, but rather on finding new ways of performing the present tasks or completely changing them (ibid.). This approach conflicts with the characteristics of KIBS, where the focus is on individuals. However, it can be argued that even services based on individual knowledge can be standardized to some extent through knowledge sharing.

Systemization is associated with increased effectiveness and profitability of projects. (Jaakkola, 2011) Thus, predefined processes or methods were developed to make some routines easier and faster. One thing to note, however, is that the aim of systemizing service processes isn't necessarily to make them quicker. Rather, it's to scope them in order to make them manageable and scalable. In fact, in some services slower production signals value and care. Jaakkola et al. (2009) mention a hospital experience as an example. Time saved by the service provider, a doctor in this case, may affect the experienced quality badly.

Jaakkola (2011) lists the reasons for systemization

- Creating templates for “boring” tasks to make work and scheduling easier
- Systematic procedures are easier to monitor and see where improvements can be made

- Familiarizing new employees to mapped out procedures is fast, which allows for more profitable expansion
- “Standardization is a prerequisite for service quality and value for the customer”
- By systemizing unproductive tasks the amount of them can be decreased and some of them can even be automated
- Lessen the emphasis on individual knowledge and skills
 - o Enables transfer of tacit knowledge

As listed above and mentioned earlier, productization is also a way of turning expertise into an organizational rather than individual asset so that the customer would buy a service rather than an individual professional. As discussed previously, however, this can be a challenge in professional consultancy services, where customization and personality are highly valued. If the company is selling highly customized services the need for experienced professional is higher than with standardized services (Jaakkola et.al 2009; Sipilä 1996). The dilemma of customer specificity and standardization can be depicted in a simple xy-scale.

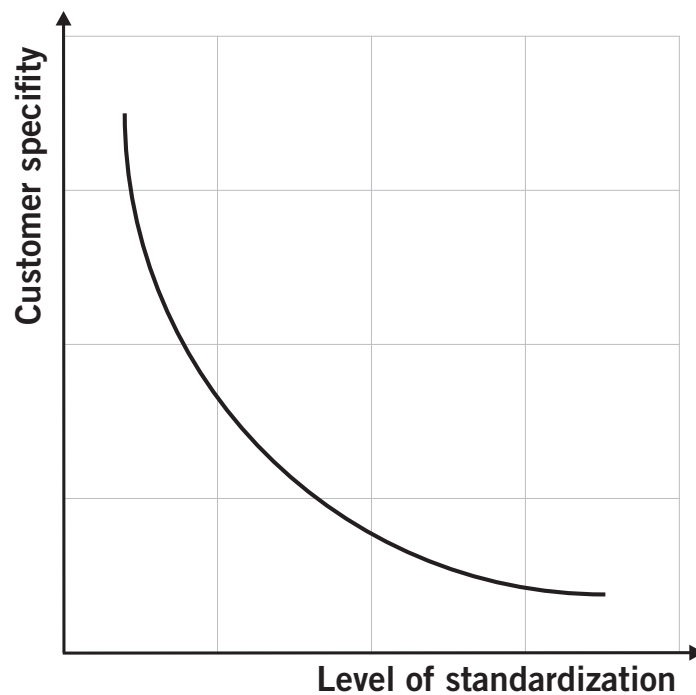


Figure 4. The juxtaposition of customer specificity and standardization.

On the y-axis is the customer specificity, which encompasses both aspects of variety and customization but the level personality or individuality as well. The x-axis represents standardization which is a vital aspect of productization. As can be seen on the graph, the company can only choose one, a completely standardized or a completely customer specific services. It can also choose anything in between, but always has to compromise one for the other. This is a crucial choice that has to be made knowingly when productizing consultancy services. As discussed before, consultancy services tend to focus on the customer rather than standardization and this is also highlighted by the matrix created by Fährnich et al. (1999, see figure 3).

2.4.3 Tangibilizing the offering

Services are difficult to sell due to lack a clear content, price tag and delivery date. This can be seen as a result of services being intangible. In Jaakkola's (2011) division of productization dimensions tangibilizing and concretizing the service offering and expertise means counter-balancing the intangible

nature of services and making the service more concrete in the customers' eyes. In the decision-making process customers often judge the service quality based on the physical evidence configured by the service provider (Junarsin, 2010). Yet, according to Fähnrich et al. (1999) the question of how services can be made tangible remains largely unanswered in the literature—at least in the 1990's.

Service tangibilization is typically associated with bringing concrete elements to intangible services by such authors as Shostack (1977), Levitt (1981) and Sempels (2002). Reddy et al. (1993) said that a service firm must tangibilize or concretize its services in order to remain competitive amongst service providers. This sentiment is shared by (Buttle, 1993). Sipilä (1996) defines the concretization as the phase in which different kinds of visible evidences and clues are collected. The idea of tangibilization can also be linked with the service augmentation concept. In that model the user interface can be considered to be the tangible side of a service (see Grönroos, 1987).

Intangibility of services causes many challenges: it makes them more difficult to assess before experiencing them. Creating prototypes of a service concept is also much more difficult than with a physical product idea. Thus, the perception of service quality is substantially more subjective than that of physical products (Junarsin, 2010). Intangibility can also cause a wide range of outcomes, and because of this they are often more difficult to price than services (Docters et al. 2004).

Customers often lack a clear understanding of what they need and what the company could offer for them (Jaakkola, 2011). This is especially true for consultancy services, as discussed earlier. The goal then is “to create simple, tangible offerings that are easy to grasp” as in that way the customer feels he's getting something concrete (ibid.). Levitt (1981) also suggests that tangibilizing services will help customers feel more confident and comfortable about purchasing services and that tangibilizing should be done

routinely on a systematic basis. Because of the intangible nature of services, some aspects can't be tested prior to purchasing services. Buttle (1993) uses an example of hotels that tangibilized their services offering with printed material such as floor plans, area maps and photos. An IT service provider can concretize its services by creating brochures, printed material, or mouse pads (Kaitovaara & Hyötyläinen, 2002). One of the key reasons for tangibilizing is to communicate the service provider's competence and trustworthiness (Jaakkola, 2011).

According to Buttle (1993, p. 37) the issues in tangibilizing services are evaluative criteria (what the buyer should look for), comparative analysis (providing information on alternative services) and differential advantage (allowing the customer to understand why the service is unique). However, some authors (e.g. Levitt) take a broader view and consider everything from what the employee wears to how the building is constructed as tangibilization.

Tangibilization aims to reduce the feeling of risk in the purchase process by reducing abstractness, ambiguity and lack of tangible evidence. It makes the customer feel that they are actually getting something for their money—sometimes even a cardboard box to signify a service is enough to help the customer understand the entity that is the service. Tangible brochures and reference material creates a same effect (Jaakkola, 2011). Making a service more concrete, therefore, isn't very difficult. Even slight additions, such as service brochures and cardboard boxes help add to the customer's feeling of getting value for money and help him/her understand that the service, while intangible, potentially has very concrete impact on the business.

2.5 Modularization of services

The first phase of productization is standardizing the offering, as discussed previously. Doing so, however, is very challenging especially in the context

of consultancy services because the customer needs are extremely heterogeneous; the services are people centric and rely on individual knowledge and creativity and the underlying need is often highly subjective. Regardless of the customer's expectation of getting a highly customized service, the company wants the service delivery to be efficient. Many service firms face the challenge of developing an offering that is flexible and adaptable to specific customer requirements while achieving efficiency through standardized processes (Edvardsson et al. 2007; Rahikka et al. 2011).

The concept of modularity has been suggested (e.g. Sundbo, 1994) to help companies gain both standardization and customization through dividing services into smaller parts. By creating small highly standardized service components, variety can be achieved by combining those components case by case. However, the meaning of modularity has not been altogether clear among scholars (Campagnolo and Camuffo, 2010).

2.5.1 From industrial to service modularization

Modularization of services has rarely been dealt with compared to that of manufacturing, despite its potential benefits. Traditionally, modularity research literature has focused on products and product design (Fixson, 2006; Campagnolo and Camuffo, 2010). According to Geum et al. (2012) the question of "how to modularize services in the practical context" is still an unexplored subject but modular product development can just as well be implemented to services and solutions (Hänninen et al. 2012). Some studies have tried to tackle the issue of service modularity, but have done so only at the conceptual level and often ignoring the practical terms (Gershenson & Prasad, 1997; Meyer & DeTore, 2001). In the manufacturing industry modularity is used to support product variety (Salvador, 2007; Starr, 2010). In general, modularity can be implemented as a way of reducing service complexity and providing service variety (Baldwin, 2007).

The dominant premise for the marketing and management approaches for professional service managers is that of customization, as opposed to standardization (Sundbo, 2002). Customization has been more of a typical *modus operandi* over the years, whereas mass production of services is still rather unusual (Bask et al. 2011). This situation leads to challenges regarding how to handle complex service portfolios, how to enable service standardization and individualization at the same time, as well as regarding the configuration of comprehensive service offerings. For these demands modularization seems to be a promising approach in the service domain (Böttcher & Klingner, 2011). The service branch of modularity research has its roots in the software industry (Bask et al. 2011). The juxtaposition of customization and standardization is also worth noting: customization by default requires something to be standardized first. Only then can it be customized.

The concept of service modularization was first introduced by Sundbo (1994), who proposed both its feasibility and its potential advantages but according to Pekkarinen & Ulkuniemi (2008) the inherent difficulty in modeling services has meant that there has been little research in the area. The term has numerous definitions, but Baldwin and Clark's (1997) definition of the term is used frequently. According to them, modules are small subsystems that can be designed independently but function together as a whole as a product.

A modular process is consists of one or several independently designed modules that function as an integrated entity which performs the function the customer requires. A module is defined as the smallest service unit that can be offered to a customer in itself or as a part of a service offering, provides separate functionality, can be removed from a product “non-destructively” and is as reusable as possible and the functionalities within a module should be standardized. (Rahikka et al. 2011; Geum et al. 2012; Tsai and Wang, 1999)

By mixing and matching different these modular components, a large number of different products can be made. For example, in the two ways below (Langlois and Robertson, 1992; Ulrich and Tung, 1991):

1. There are one or more basic modules, which are the same for all products and additional auxiliary modules can be chosen to customize the end product. In addition to these, some parts of the product can be customized specifically to individual customers, so they are “non-modules”, and have to be developed.
2. The end product can be customized from modules, without any basic module. Also “non-modules” can be added here.

The process of modularization starts with decomposing the service into its components. Because of the intangibility of services there have been little studies connected to this in either academic literature or practice. Because of their process-based nature, modularizing services can lead to various advantages, such as operational efficiency to new service development (Geum et al. 2012). The existing literature has focused on the development of product modules from the service and maintenance perspective, rather than on service modularization itself (ibid).

Restaurants are often used as an example of modularized productization (Parantainen, 2008; Jaakkola et al., 2009; Kurvinen, 2008). A restaurant uses different components to create various varieties of meals. This is highlighted especially well by fast food restaurants. By combining French fries, different drinks, different hamburgers and desserts an almost unlimited amount of different meals can be created. Also, by defining the individual components in detail, the vagueness of the offering decreases substantially. It directs the customer to choose from the pre-defined packages rather than to demand something altogether different.

It's important to understand the difference of variety and customization. Bask et al. (2011) explain the difference: the idea of product variety is to offer the customer multiple options, but product customization aims to offer each customer exactly the wanted product. They also state that the insight behind mass customization is that a customer does not want product variety per se but rather his own version of a product. How this difference affects the modular productization of consultancy services remains to be seen as it seems that consultancy customers want customization, not variety—as discussed in the first chapter. However, by creating enough variety, it might be possible to achieve the benefits of customization in the customers' eyes. In short, if the customers care about the conceptual differences of customization and variety, the success of modular productization of consultancy services might be at risk. If not, the potentials of modularization are huge.

2.4.2 Benefits of modularization

By modularizing services, there's a potential for a wide range of benefits including cost savings, product variety, enhanced flexibility, simplification of complex systems, economies of scale, decreased lead times, ease of testing and ease of maintenance (Jose and Tollenaere, 2005; Pekkarinen and Ulkuniemi, 2008, Bask et al., 2010; Gershenson et al., 2003; Kusiak & Huang, 1996; Sanchez, 1995; Wang, 2009).

One of the key benefits is that modularization can enable cost savings while focusing on the customer needs (Geum et al. 2012). By detaching service features from each other, the small single function service processes become standard. The smaller the module, the more feasible it is to standardize it completely. Of course, there's a danger of creating modules that are too small which results in an unreasonable amount of them. As Geum et al. (ibid, p. 581) point out, “mass services are more likely to be modularized than professional services”. This is most likely due to the relative

homogeneity of customer needs on the mass market. Modularization also eases customer's burden of managing project implementation and increases their willingness to outsource or buy more services (Rahikka et al. 2011).

As discussed and illustrated previously, the main challenge of productizing consultancy services is that the company can only choose one: focus on the standardization or focus on the customer specificity. Modularizing the service offering helps push this envelope.

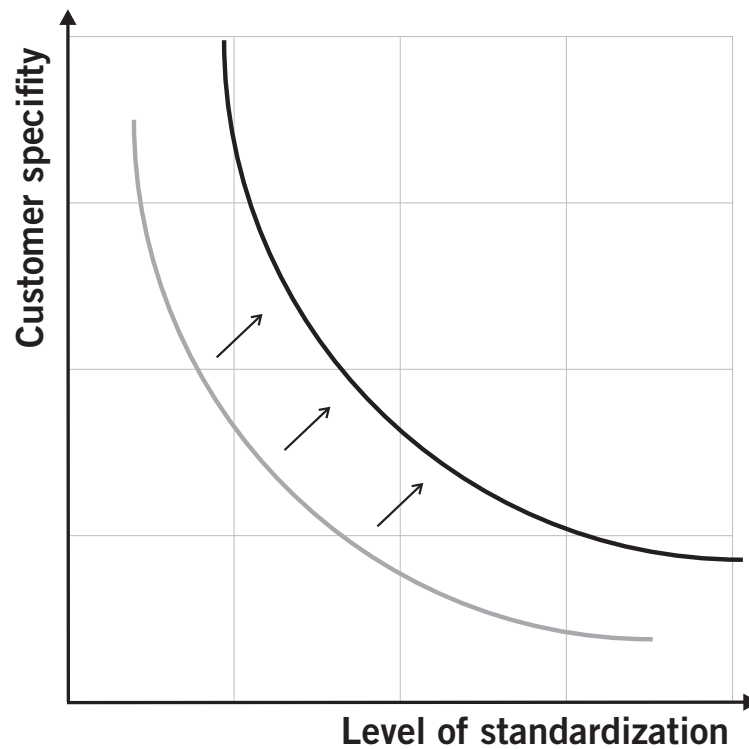


Figure 5. The juxtaposition of customer specificity and standardization aided by modularization.

As illustrated before, the customer specificity is on the y-axis, which encompasses both aspects of variety and customization but the level personality or individuality as well. The x-axis represents standardization which is a vital aspect of productization. What modularization allows the

company to do is to push the curve forwards and thus allowing for more customer focus while retaining the possibility to standardize.

There seems to be a consensus among researchers that standardization and product modularity are conceptually inseparable (Jacobs et al. 2007). Therefore service modules have to be described very precisely to tap the full potentials of service modularization (Böttcher & Klingner, 2011). Also, to achieve successful service modularization, a structured representation of service modules is one of the main aspects (ibid).

3 CREATING A SERVICE BLUEPRINT

A consulting service can be every bit as complex as a jet airplane; yet the difference in engineering effort that goes into designing these two entities represents total extremes. (Shostack, 1982 p. 58)

Tackling the challenge of standardizing the service offering, tangibilizing the service and systemizing the service processes is a huge challenge, but those are the requirements for successful productization of services, as discussed in the previous chapter. As Grönroos (1998) notes, both the outcome and the process have to be carefully planned and as much as possible of service design work or actions should be reusable (Hyötyläinen and Möller, 2007). However, describing a service is “one of the most difficult aspects of dealing with a service” (Shostack, 1992, p. 75). A tool that helps to plan the service process while taking tangibilization and service offering into consideration is a framework called service blueprinting.

3.1 Utilities of service blueprinting

Services are fundamentally processes (Grönroos, 1998) and as Shostack (1987) argues, they should be described as steps and sequences. Because of this the focus of service design is in designing processes (Ramaswamy, 1996). However, due to their intangibility, heterogeneity and perishability often only words are used to specify them. This results in oversimplification and incompleteness. (Shostack, 1984, 1987) Quality problems often arise from services that are not carefully designed and no clear descriptions of the contents have been defined before they are produced (Grönroos, 1990; Bullinger et al. 2003). As paraphrased by Bitner et al. (2008 p. 70), a “smoothly delivered service with a positive outcome is more likely to result in favorable service quality and brand image evaluations, which both have influence on customer loyalty.” They continue that recurring service quality problems are often the result of poor design.

Hyötyläinen and Möller (2007) argue that because of the ever more complex technologies and complicated customer demands service development has become very difficult and that service design is a crucial phase in addressing those issues in production, implementation, customer perception and satisfaction. Furthermore, the most successful organizations providing new services keep their service development processes from being ad hoc (de Jong & Vermeulen, 2003). Doing so is a huge challenge: the inseparable nature of customers as both producer and consumer causes development to often fall back on informality and ad hoc efforts (Kelly & Storey, 2000; Thomke, 2003). Again, the special characteristics of consultancy services highlight these problems: the services are often co-produced with the customer and customer demands are not only complicated but also diverse.

Service blueprinting was introduced by Shostack (1982, 1984, 1987) and is the most well-known model in the service development context. The method was developed further by Kingman-Brundage (Kingman-Brundage, 1989, 1993) to visualize service processes (Fließ, M. Kleinaltenkamp, 2004). It's a map in which a service process is displayed so that people involved in providing, designing and managing the service understand it objectively regardless of their individual points of view (Zeithaml & Bitner, 2003). Bitner et al. (2008) note that blueprints are ideally developed by cross-functional teams, possibly even involving customers.

Service blueprinting was initially introduced as a process control technique to allow for more precise than verbal definitions, preemptive problem solving and to be able to identify failure points in service operation (Bitner et al. (2008). It was further evolved into a more customer-focused technique, separating the customer and the organizational processes, introducing physical evidence into the mix, and some researchers have combined it with, for example, the critical incident technique (Stauss & Weinlich, 1997). Service blueprinting is a “flexible approach that helps

managers with the challenges of service process design and analysis” (Bitner et al., 2008 p. 69). It helps create a comprehensive, visual overview of an entire service process (ibid). Service blueprinting can be seen as a heuristic method for analyzing and designing service processes (Fließ & Kleinaltenkamp, 2004).

According to Bitner et al. (2008) an analysis of the client’s consumption and co-creation process, interactions with the service provider and the underlying support processes are essential in managing a service. While some of these steps are completely invisible to the end customer, understanding how those activities link to the client’s process is crucial in ensuring the value proposition. A good service description also makes training new employees, developing standard operating procedures and identifying ways to customize services easier (Congram & Epelman, 1995).

When simplifying a complete service into a model, it’s important that the graphic presentation is understood by all stakeholders. The language used must be clear and consistent and the model must have the management’s support. Also the people creating the model must understand their roles (Gummesson 1993, p. 205; Bitner et al., 2008). If these actions are done correctly, service blueprinting is highly useful: the roles and responsibilities, equipment and cost factors are described in detail which makes the service manageable. Also, the development process benefits from the employees’ input in terms of leveraging their prior experiences into the model, thus helping service employees become more effective in their responsibilities (Congram & Epelman, 1995). Collaboration between the operations, marketing, and human resource function is highly important while building the blueprint (ibid).

Modeling has been commonly used in organizational and business process development, as well as in information systems and services design (Danesh and Kock, 2005; Sun, Zhao, Nunamaker and Sheng, 2006; Damij, 2007;

Frye and Gulledge, 2007; Turetken and Schuff, 2007; Wegmann, Lê, Regev, and Wood, 2007). Service blueprinting shares similarities with these approaches but is not as complex or as formal as some business process modeling tools such as UML (Bitner et al., 2008; (Siau and Loo, 2006). Blueprinting differs from other flowcharting techniques because of its customer process oriented approach. When creating a blueprint the customer process is plotted first and all other activities are then defined so that they support the value proposition offered or co-created with the customer (Bitner et al., 2008).

A complete blueprinting gives managers the opportunity to identify potential fail points and to design foolproof procedures to avoid their occurrence as to ensure the high quality service delivery (Fitzsimmons and Fitzsimmons, 1999). Also, with a blueprint different aspects—such as price and process changes—of the service can be evaluated separately (Shostack, 1982).

To summarize, Shahin (2010) lists the benefits of blueprinting:

- The visual representation makes it easier to determine which activities are truly necessary, which can be deleted, and which can be modified
- Customer contact points are clearly identified. This helps to point out activities that can be performed separately and where opportunities for co-processing of activities exist
- Likely service failure points are identified. This is helpful in developing plans to minimize the chance of a failure and in identifying possible corrective actions, if failure does occur
- The service blueprint is an excellent tool for training workers. They can see what activities must be performed and how; where failures are most likely to occur and how to prevent and correct them

- The blueprint is useful for identifying the equipment and materials needed and how the service facilities should be spatially arranged to facilitate the services.
- Service blueprints can be reconstructed regularly and used to evaluate and improve the service system over time, especially as new.

When refined and continuously modified and iterated, a blueprint can be distributed and implemented on other sites as well (Shostack, 1982). This is one of the main points of service design in general: reduce the dependency on individual knowledge. Doing so, a company can send the service delivery material to a new site rather than individuals who are the only ones able to deliver and trust that the quality remains the same. As one of the key characteristics of consultancy services is that they are highly dependent on individual knowledge, there is high potential in sharing that information. It allows for more rapid expansion while ensuring a consistent service quality.

Generalizing knowledge is also a challenge from the purchasing point of view: as discussed, customers often think of “buying” individuals, rather than organizational knowledge. Therefore generalizing that and wrapping it into a homogenous package carries risk of losing the customer, as it doesn't feel as personal or tailor made for the customer's specific need, even if the contents are actually better thought out and the process is not ad-hoc in nature.

Linking service blueprinting to the phases of productization defined earlier, it's clearly a tool for the second phase: systemizing and standardizing processes. Blueprinting helps understand all the individual steps of a service from both the customer's and the company's own point of view. By creating a complete map of the service process it's easy to identify steps that require customer input, support from within the organization and also link tangible elements to the service. By doing this, the company can measure the service

quality more easily, discover the potential pitfalls and possibly even automate individual steps of the service.

3.2 Creating the blueprint

Service blueprint consists of five components: customer actions, visible contact employee actions, invisible contact employee actions, support processes and physical evidence (Bitner et al., 2008) and each of these areas are separated by a line of interaction, a line of visibility, a line of internal interaction, and a line of implementation respectively (Lovelock, 1992). The line of visibility separates the activities of the front office, where customers obtain tangible evidence of the service, from those of the back office, which is out of the customers' view. The high and low contact parts of the service delivery process are kept physically separate, but they remain linked by communications (Shahin, 2010).

A service blueprint can be seen as a two-dimensional picture of a service process in which the chronology of actions conducted by the service customer and the service provider is on the horizontal axis and the vertical axis distinguishes between different areas of actions (Fließ & Kleinaltenkamp, 2004). According to Lovelock (1996), service mapping refers to the portraying of an existing service process, whereas service blueprinting is the technical term for the purpose of planning a new or revised service process.

Physical evidence	
Customer actions	Line of interaction
Onstage/visible contact employee actions	Line of visibility
Backstage/invisible contact employee actions	Line of internal interaction
Support processes	

Figure 6. Service Blueprint Components. (Bitner et al. 2008; Ojasalo, 2012; Shostack, 1984, 1987)

Customer actions “include all the steps that the customers take as part of the service delivery”. They are mapped out chronologically and are central to the creation of the rest of the blueprint as all other activities are seen as supporting the customer’s process. The onstage/visible contact employee actions are below the line of interaction, as they are the frontline actions interacting face-to-face with the customer. When the line of interaction is crossed, a moment of truth occurs. The invisible/backstage contact employee actions occur below the line of visibility. They include all the actions where there is direct but invisible contact with the customer (e.g. phone calls) and other activities the employees do to serve the customer (e.g. chefs cooking food). The support processes are below the line of internal interaction. They are processes that have no contact with the customer what-so-ever but are necessary for the service delivery. The final element of service blueprints is the physical evidence, which includes all the tangibles the customer is

exposed to and that can influence the perceived quality of the service. All physical evidence elements are mapped so that they match each customer action. (Bitner et al. 2008; Ojasalo, 2012; Shostack, 1984, 1987)

Bitner et al. (2008) define the early stages of development as “fuzzy front end”, which is characterized by low levels of information, processes that aren’t well defined and high amount of ad hoc decisions. As the development goes further, the initial ideas are concretized as a concept or a prototype which can be presented for the customer and the employees. In building a model of service, it is essential to take into consideration the information about the viewpoints of the service provider and of the service receiver (Shimomura & Tomiyama, 2005). A blueprint can be produced iteratively and in many cases the customer and other relevant parties should be involved in the process. (Bitner et al. 2008) Linking the early stages to Sipilä’s (1996) model of productization, they can be seen as the first stage: productizing the internal work methods. When the development goes further with help of blueprinting, the company can reach the levels of a productized service that can be reproduced and duplicated. Reaching a completely homogenous state for a single consultancy service is difficult if not impossible, but whether or not that matters will be discussed further in the empirical part of the study.

Before creating a blueprint, the service process or sub-process to be blueprinted has to be defined and scoped. By doing so, it’s easier to manage the blueprinting process as not all conceivable functions will have to be added to the model. It’s also important to clarify where the service starts and stops from the customer’s point of view, as that tends to “generate considerable discussion” within the service provider’s organization (Bitner et al. 2008).

The process of building a service blueprint consists of the following phases (Zeithaml, Bitner, and Gremler, 2009, Bitner et al. 2008; Sipilä 1996).

1. Identifying the service process to be blueprinted
2. Identify the customer or customer segment experiencing the service
3. Mapping the service process from the customer's point of view
4. Mapping contact employee actions and/or technology actions
5. Linking contact activities to needed support functions
6. Adding physical evidence of service at each customer action step.

In many cases it is not known at the beginning of the service process what the customer wants and expects in detail, and consequently what resources should be used and to what extent and in what configuration they should be used (Grönroos, 1998). The first three steps of creating a service blueprint partly answer these problems: first the single service process is identified from the service offering portfolio of a company. Second, identifying the customer segment limits the expectations of a single customer. Third, mapping the customer process provides clear input as to what resources are needed when delivering the service.

It's important to note, however, that blueprinting starts only when the complete offering is mapped out and single service modules are identified. At that stage the company's strategy and customer input plays a significant role and understanding the customer needs is crucial. As Jaakkola et al. (2007) say, defining the services is the most essential part of the productization process—only after that the detailed productization of selected services can be done.

While creating a blueprint, establishing an internally networked core development team, piloting, selling, and training are important and managers should devote time and resources to them. "If these phases are not handled properly the offered services will ultimately be nothing more than a pile of PowerPoint slides". (Kaitovaara & Hyötyläinen 2002)

While establishing a core team is important, Junarsin (2010) talks also about the importance of a “service champion” which is defined as someone charged with nurturing and protecting a new service from idea generation to commercialization stages. He continues that successful firms allow champions the opportunity to stay and manage a service offering into the launch phase of the process.

To summarize, creating a service blueprint starts from identifying the service to be blueprinted. The prerequisite for this is that the company’s service offering is mapped out and individual service entities are identified. Understanding the customer segment is the second phase of blueprinting and is important as systemizing a service delivery process is impossible if there are too many customer needs to be taken into consideration. After these steps the actual service blueprinting starts, first by mapping out the customer’s process following with mapping the company’s own processes. Finally the tangible aspects of the service are connected with the customer’s process. To do this, the company should establish an internally networked core team, led by a service champion.

3.3 Linking modular productization and service blueprinting

As discussed before and illustrated in the theoretical framework, modularization can be seen as a pre-requisite for service blueprinting. This is true especially if the service portfolio is vast and complicated. Remembering that a blueprint should be understood by all stakeholders (Bitner et al. 2008), it should be kept relatively simple. Modularization of services makes things easier, as the entities to be blueprinted will be limited in scope. The connection between blueprinting and modularization is in short: the service to be blueprinted is a service module derived from a service portfolio.

A service blueprint, as previously described can be divided into two: the visible aspect and the backstage aspect. These are separated by the line of

visibility. As defined in the previous chapter, productization can be divided into three: specifying and standardizing the service offering; systemizing and standardizing processes and methods and tangibilizing and concretizing the service offering and professional expertise. A similar pattern can be discovered in both divisions—the physical evidence aspect described in a service blueprint is the tangible part of a service, the backstage/invisible contact employee actions and support processes are the systemized and standardized processes and methods. The complete standardized service offering is the tray from which a single blueprinted service is chosen from. This is the first phase of building a service blueprint, as defined previously.

When the service portfolio is modularized, it's important to think about logical and temporal inter-dependencies (Böttcher & Klingner, 2011). This means understanding the chronology of the modular service processes, and which module is needed in order to implement another. That is, the modules can't be assembled into a customer specific solution at random, but they do have some structure that needs to be taken into consideration. Hyötyläinen and Möller (2007) found out that modularity exists on a functional level—services can be split into functions that need to be performed to produce a service that can subsequently be utilized to produce many different services. Thus, by combining the service modules, or blueprints, customer specific solutions can be offered.

To illustrate this connection between service blueprinting and productization, we can look at a new framework revised from the original theoretical framework. First, the offering is standardized and modularized. Second, the service to be blueprinted will be chosen from the modularized offering and the customer's process, the visible and invisible employee actions and support processes are mapped as defined in the blueprinting process previously. Third, the physical layer is added to the blueprint, which completes the three steps of productization: standardizing the offering,

systemizing and standardizing the processes and finally tangibilizing the service.

Phases of modular productization through service blueprinting

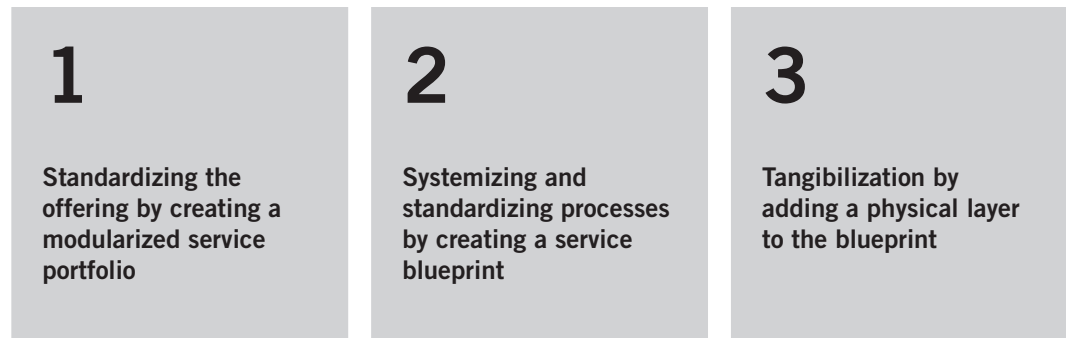


Figure 7. A revised version of the theoretical framework.

4 CASE QPR: PRODUCTIZING CONSULTANCY SERVICES MODULARLY AND EVALUATING THE BENEFITS AND CHALLENGES OF SERVICE BLUEPRINTING

The main problem of the Thesis is “How can professional consultancy services be productized modularly through service blueprinting?” A theoretical framework was created for this in the first part of the Thesis. The role of the empirical part of the study is to verify this framework in practice. First, the background of the study and the case company are introduced, and then the state of productization in the company is discussed. Finally, a service blueprint will be created of the selected service and its benefits and challenges analyzed.

4.1 Background of the study

QPR Software Plc. is an IT-company whose commercial focus is slowly shifting from software to consultancy services. The purpose of the case study is to function as a proof of concept for the future productization of QPR's services. A service blueprint is created of a software upgrade package offered by the company.

It should be noted that the software upgrade isn't as straightforward as it sounds: in addition to installing the client software, it requires a database migration which is not trivial. Thus the customers usually choose QPR's consultants for the work instead of doing it themselves.

4.2 About the case company

QPR Software Plc. is a publicly listed management consultancy and software company that has over 1500 customers around the world both in the public sector and the private. It had 81 employees in the end of 2012 and the revenue for that year was 9.3 million euros. (QPR, 2013)

QPR offers software designed for managing processes and IT infrastructure with the products QPR Enterprise Architecture and QPR ProcessDesigner, and measuring processes and performance with QPR Metrics and QPR ProcessAnalyzer.

4.3 Productization at QPR

The first phase of the empirical study is to evaluate if the theoretical framework can be applied to the case company's productization efforts in practice. Because the term productization isn't very established yet in the academic literature or indeed the practices of many companies, it was first important to survey how the QPR management actually understands the term and to compare this to the theoretical definitions. Three key personnel were interviewed: SVP and director of direct and OEM, Sales Director and the team lead for QPR Software Consulting.

All the interviewees shared the view that a productized service package includes the description of what will be delivered and what the benefits are. Sales Director Knuutila (2012) sees the benefits as a productized service being easy to buy and easy to deliver while being cost-effective by either raising the volume or improving profitability. He continues that purely an hour-based pricing isn't scalable and that through productization the company can start using value based pricing models. As of now, he says, the created value of each service isn't completely understood.

Erkheikki (2012) says that productizing first entered the picture in 2010. Before that the service production and sales processes were mostly an afterthought:

The customers would have bought [services] even if we hadn't sold them. They even demanded training and installing services to be offered.

QPR's productization—or offering development—process currently consists of five stages starting from an idea which can come either from a QPR employee or a customer and ending with a finalized service product. (Erkheikki, 2012; QPR, 2012d)

1. Idea
2. Sketch
3. Concept
4. Prototype
5. Productized service

These phases can be compared with Sipilä's model of productization (1996) where first the internal work methods are productized, then the product support is added and finally a reproducible and duplicable service is developed. QPR's approach is to first get the idea either from customers or internal consultants, sketch it and create a rough concept. A prototype is then tested together with a pilot customer. In this phase the internal work methods are productized. Finally in QPR's last stage a productized service is created and can be reproduced.

Currently the scope of productization, according to Erkheikki (2012) is rather limited. Some services are productized to the extent that sales materials can be reused while in some service production the instructions and processes are standardized to some extent (Vihervuori, 2012). According to all of the interviewees, however, most of QPR's service production can be regarded as ad-hoc rather than pre-planned. (Erkheikki, 2012; Vihervuori 2012; Knuutila, 2012) Knuutila (ibid) points out that some best practices have started to emerge in the sales phase, but that the ultimate goal of being able to produce and sell a service by anyone from the company is yet to be fulfilled. In the light of this, perhaps surprisingly QPR's customers feel that many of the company's services are indeed already productized to a large extent. (Järvi & Slotte, 2013) More than

anything, this probably highlights the fact that the term “productization” is understood in a number of ways.

Before the strategy revision in 2009, services contributed to the overall revenue less than 10% (Erkheikki, 2012). By the end of 2012 professional consultancy services amounted to 26% of the total annual revenue of QPR (QPR, 2013). According to Erkheikki (ibid), this has led the company to realize the need of productizing from both the internal and external points of view. From the customer point of view, he says, ensuring a uniform quality in service production is highly important in addition to delivering what was promised during the sales process. He continues that from the internal point of view efficient services production and selling as well as onboarding new employees would benefit hugely from productizing. All these ideas reflect the findings made in the theoretical part of the study.

While the company's plan to expand the service business is clear, measuring the service production isn't. All consultants' work hours are reported but as Erkheikki (2012) says: "actually our systems and reporting don't even support tracking the profitability of it (service production)" as of now.

One of the challenges of service production is its person specific nature as discussed in the theory part of this paper. This is still a continuous challenge within QPR, but it has improved a lot during the year 2012 and with the efforts to productize, this situation will improve further. One of the cornerstones of this development at QPR is skill development and knowledge sharing (Erkheikki, 2012). As was mentioned in the theoretical part of the study, productization helps facilitate knowledge sharing. In Suddaby & Greenwood's (2001) view productization is in fact, as mentioned previously, all about knowledge sharing. As Ojanen (2007) says, the reason for sharing knowledge in a knowledge-intensive company, such as a consultant company, is to be able to reuse the information as much as possible using various information systems to store concepts and tools.

The productization process according to Erhkeikki (2012) and QPR's process charts (QPR, 2012d) is orchestrated by one person. However, the "army of 30 consultants" can be utilized when necessary. This process shares the "champion" ideology discussed in the theoretical part. Establishing a core team for each service development process can therefore happen by creating virtual networks, rather than change any organizational structures.

According to the sales manager of QPR, the biggest challenge in the sales of professional consultancy services is to find out what the customer needs and tailor the sales method as well as the offering to match the need completely (Knuutila, 2012). The company's customers say that the value of QPR's services derives from time savings and sparring as well as best practices QPR's consultants have learned in prior projects (Järvi & Slotte, 2013). Both of these factors highlight the difficulty of productizing consultancy services. The customer's underlying need is often well hidden and packaging services into a coherent entity that answers a direct problem does little to help.

4.4 Standardizing and modularizing the offering

The first phase of productization is standardizing and modularizing the offering into concrete manageable service modules. The case company's situation follows the theoretical framework to the point. The importance of mapping the complete service offering has been understood and is underway. Erhkeikki (2012) points out that mapping the offering is a huge effort and its pace is limited due to resource limitations.

QPR's full offering will be divided into two: operational development based on enterprise architecture and process analysis methodology (Erhkeikki, 2012). Before these offerings can be divided into smaller more concrete blocks, or modules, Erhkeikki (ibid) says that the offering has to be

understood within the whole company. Therefore it can be observed that QPR is in the first phase of productization: standardizing the service offering. Modularization means standardizing work practices and service offering, and while the company's management has clearly understood the importance of mapping out the complete service canvas, the work has not yet proceeded to the level where single service modules could be identified and developed further.

Some high-level division of service types were discovered during the making of this paper. The consultancy services that QPR offers currently mainly augment the software products. Numerically, most of the services sold are still software installations, training and supporting the customer. However, the company's long term strategy, as already defined in 2009, has been to shift the focus towards services rather than software products and expand the service business (Erkheikki, 2012). This means that new services don't necessarily need to augment the software offering. More importantly, they must function as stand-alone packages with their own concrete value benefits. According to the company's annual report of 2011 (QPR, 2012a) the goal of QPR is to become a significant partner for its customers and help them gain competitive edge by developing processes and enterprise architecture.

It's in QPR's interest to connect the technical task of a software upgrade to a bigger canvas in which the customer company's business requirements were scoped as well. Knuutila (2012) mentions that if done properly, a simple software upgrade could potentially lead to big follow-up sales. To do this, however, the complete service offering has to be understood.

4.5 Systemizing and standardizing processes

The second phase of productization is systemizing and standardizing processes. In this paper service blueprinting is the chosen method for

achieving service process standardization. Because QPR's service canvas had not yet been fully mapped when this research was conducted, a single service was chosen for the case study somewhat blindly. Reasons for selecting the software upgrade service are discussed later on.

The starting point for systemizing and standardizing the software upgrade and training services were rather good relative to other services in QPR's arsenal. As Vihervuori (2012) remarks, the software upgrade installation is probably the most productized service in the QPR service portfolio. Other services are more or less ad-hoc, according to all the interviewees (Erkheikki, 2012; Vihervuori, 2012; Knuutila, 2012).

It was discovered that the entity which was normally regarded as just the "upgrade service" actually consists of the actual software upgrade and the training session usually sold and delivered together with the upgrade. The software upgrade service already had some readymade, reusable parts such as an email template for routine questions, but the training service is mostly conducted with material assembled by each consultant individually. Vihervuori says that the customized part of a training service is whether to use the customer's own software environment or not. Further customization derives from the consultants' own preferences.

Knuutila (2012) mentions that value proposition for the service has not been defined. QPR's service development is quite inside-out rather than customer oriented. Because of this, service blueprinting was seen as a valuable exercise as its basis is on customer's process. He sees that the value of productized services derives is the fact that they are something concrete upon which the customer can comment:

[With productized services] we could discuss the actual problem and understand the customer faster when we can put something on the table and [ask] “Is this it? No? Let’s add a handle and a lid and then it’s good”

Based on this view, consultancy services don’t need to be standardized to the full extent of being almost completely automatized and replaceable by machines, as suggested by Levitt. Rather, they should be standardized enough that their contents, delivery and pricing can be communicated to all stake holders. This is a compromise, which can actually make the productization of consultancy services feasible.

4.5.1 Creating a service blueprint of a software upgrading service

QPR is only at the first phase of productization, standardizing the offering, as discovered earlier in the paper. However, during this research all the phases of productization were evaluated. To test if standardizing a relatively simple consultancy service is possible in practice, the framework of service blueprinting was used.

In creating the service blueprint for the service, the stages defined in the theoretical part of the study were used: identifying the service process to be blueprinted; identifying the customer; mapping the customer’s process; mapping the contact employee actions; linking the contact activities to support actions and finally tangibilizing the offering and adding physical evidence.

Creating the blueprint was fairly straightforward, but the value in it is that potential pitfalls, problems and details that are often otherwise overlooked are explicitly visible. It also provides a framework which can be further developed and optimized so that the service is eventually efficient to sell and deliver in addition to being easy to buy. The following chapters describe the

process of creating the service blueprint. The main reason for creating the blueprint was to evaluate its feasibility and benefits for further service development in the case company. The final blueprint can be seen in appendix 2, and it will only be referenced throughout this chapter.

4.5.2 Identifying the service process to be blueprinted

The first stage of service blueprinting is to identify the process to be blueprinted. As previously discussed, this should ideally be chosen from a complete service portfolio. This was not the case, however, as the work of mapping out the offering portfolio was underway in the case company during the writing of this paper.

The software upgrade service was chosen to be blueprinted as a proof of concept for QPR's future productization projects. There are various reasons for this decision: the service is ordered relatively often, it's not crucial for the company in terms of revenue as each project is priced at about 3-5000 EUR; it has limited scope relative to other service packages that QPR offers, but also because it has a big impact on customer satisfaction—the reasons for upgrades being bug fixes and new features often requested by the customers.

One of the big challenges in scoping the service process was deciding whether to include the sales phase in the blueprint. However, as the blueprint's idea is to map the actual service process the sales phase was decided to be omitted. Also, the sales process is typically short. Knuutila (2012) says that the need for software upgrade is something that the customers have thought about themselves, and the sheer mention of the possibility often results in a sale. Therefore no active sales effort has really been allocated towards the service (Knuutila, *ibid*).

An almost instant and relatively obvious discovery was that the service upgrade service consists of two modules: the software installation and the software training package. It was decided that as the package is mostly sold as one, both services would be blueprinted.

4.5.3 Identifying the customer

The second stage of blueprinting is to identify the customer. The typical customer who buys a software upgrade is a company who already uses QPR's software. Knuutila (2012) says, that the role inside the customer company is typically the IT or development. Both Knuutila and Vihervuori (2012) share the view, that typically the interest is developed in the customer company internally without the aid of QPR sales personnel or consultants. The reason for software upgrade is to get new features or to get bug fixes for old versions to gain stability and up-time.

As with QPR's services in general, there is no vertical segmentation. This makes further segmentation relatively pointless. In short, the customer segment for the software upgrade service includes companies who use old versions of QPR's software.

4.5.4 Mapping the customer's process

The third stage of blueprinting is mapping the customer process and is the point where the drawing of service blueprint actually starts. QPR's own process mappings were studied carefully before the process of service blueprinting was started in the case study. The software upgrade service processes were mapped in a relatively detailed manner in QPR's own documentation (QPR 2012b, 2012c). However, from the service blueprinting point of view, the most important aspect was almost completely missing: the customer's process was not mapped. In fact, the only customer action during the whole process was testing the software environment during the installation.

As mentioned previously, it was discovered that the service consists of two modules: software installation and training. Both of these were blueprinted as they can be considered to be two modules under one service umbrella. As defined, modules are entities that function both separately and together to form a complete service.

The service installation module starts with the ordering of the service. After that the customer will inform QPR about the technical specifications. This is done via a questionnaire. When the specifications are clear, the customer can install the client software and start testing the server environment. Vihervuori points out that the customers don't always understand how crucial testing is during a software upgrade (Vihervuori, 2012). Testing is crucial in order to discover the possible pitfalls before full production use.

The software installation service is fairly straightforward and standard from QPR's point of view. However, it's technically quite complex and therefore the customers rarely handle it themselves. While the customers obviously have different technical environments and the upgrade is done for different software versions, the phases in the customer process are always the same (see Appendix 2).

Finally the phase of giving feedback was added to the process. In that way, the company will be able to systematically monitor the success and customers' satisfaction rate of the service delivery. As Parantainen (2005, s. 197-198) mentions, the systematic development of a service is possible through customer feedback. This is also something that the company had not explicitly thought of before as something that should be conducted systematically, but blueprinting the service helped identify the need for it.

Vihervuori (2012) says that normally a software upgrade takes 2-4 work days from QPR employees and is often done partly remotely. However, including all the testing and waiting for the customer input the project can

take up to 4 weeks. This reflects Zeithaml's and Bitners (2000) view that customer input or the lack of it can stretch the amount of time needed for carrying out the project, as discussed in the theoretical part.

The software training module begins with scoping the training sessions. This is where the requirements of a productized service clashed with the current service delivery methods: currently the service is carefully scoped with each customer specifically with their main user.

However, two aspects that are typically customized were identified. First, the training can either be conducted as bulk training, where the users are taught how to use the software in a generic environment or as an environment specific training, where the customer's own servers are used in order to show the trainees how things work in their own setting. Second, currently the approach to the training sessions depends on the individual consultant who is sent to the training site. The training can be software oriented or methodology oriented. As Vihervuori (2012) points out, the approach is based solely on the consultant's discretion.

Table 2. The four types of training sessions.

Bulk training, methodology oriented	Bulk training, software oriented
Environment specific training, methodology oriented	Environment specific training, software oriented

A simple 2 by 2 matrix provides four types of training sessions. Instead of selling them under one name, they could be named differently and the

outcomes of each of them should be highlighted and communicated clearly. Also support material should be created for each service so that any consultant can deliver any of them. As this will be done, the need for customization should diminish because the basic requirements are understood and offered to the customer, and he/she only needs to choose the suitable training session. Therefore by creating variety the problematic of customization was, at least in theory, solved as discussed in the theoretical part of the study.

While drawing the customer's process, the training session was still thought of as one entity as the process stays the same regardless of the chosen scope. The differences are in the training material. After the scoping is done, the service process is very straightforward for the customer: it only includes the phases for participating in the training session and giving feedback.

4.5.5 Mapping the contact employee actions

When the customer's process is mapped, the next step and the fourth stage of service blueprinting is to map the contact employee actions. This phase is two-fold: firstly the onstage visible contact employee actions must be mapped. These are still above the line of visibility, so they are seen by the customer. The line of interactivity is also in between the customer's process and the visible employee actions, which means that this process is all about the interface between the company and the customer. The second part of this phase is to map the backstage invisible contact employee actions.

Because visible employee actions by nature require contact with the customer, they are based on the customer's process (Bitner et al., 2008). As the customer's process in the software upgrade service includes phases of ordering the service, filling out a questionnaire, installing the client software, testing the server installation and giving feedback, it was relatively straightforward to deduct the visible employee actions from these.

The visible employee actions are: receive the order, providing installation instructions and finally receiving feedback. The nature of the software upgrade service is that most of the work happens below the line of visibility. The essence of the service is in the three functions carried out by the support staff: receiving the questionnaire form which includes the necessary technical details; installing the test environment; testing the environment and implementing the installation into the production environment. None of these actions are visible to the customer, and are indeed what the customer is paying for: to not have to see these.

The question of how the feedback should be collected from the customer was a difficult one: as the service's nature is that there's no need for the QPR personnel and the customer to be in the same space, the most convenient way to collect feedback is through an online form or by phone. However, as discovered in the LEAPS project conducted by Aalto University, QPR's customers prefer giving feedback less formally (Järvi & Slotte, 2013). This would suggest that a shared lunch or a coffee break would be an ideal forum in which to share experiences. The findings were taken into account, but it was deemed that there's no need to plan the feedback collecting further as the evaluation is purely technical—either the new installation works or it doesn't. In the case of the software training sessions, on the other hand, implementing a semi-planned coffee break can be done easily.

In the training service, the customer's process consists of ordering the training, scoping the session, participating in the sessions and giving feedback. The visible employee contact actions are: Receive the order, scoping the session, train the customers, and receive feedback. As things are, there are no backstage employee actions. However, the scoping of training sessions has been a tedious process with most customers and the agenda is planned and agreed upon individually with each customer. In future, the training sessions should be modularized according to the division specified

earlier and readymade templates and material should be generated to support both selling and delivering those different training sessions more efficiently. In the long term that would even allow for selling basic services online. It would also remove the redundant step of scoping the session, which currently takes time and causes variety in the level of services delivered.

It was also discovered that by dismantling the process into smaller steps, it's possible to review each phase individually and assess their automation possibilities as well as their possible pitfalls. For example, as the training sessions aren't great sources of revenue for QPR, but are required by the customers, automatizing them by implementing online training sessions could prove to be a relief for the scarce consultant resources.

Deciding the level of the map was deemed difficult, when doing this: whether to map out a coffee break for example was questioned. Normally this necessarily wouldn't be thought of as an important aspect of a training session, but as mentioned previously, it's a valuable forum to gain an understanding whether the customer is satisfied or not.

Even while mapping the employee actions, it's important to keep the focus on the customer, as was emphasized by Bitner et al. (2008). It was discovered that this is a lot easier said than done, and many times during mapping the contact employee actions the customer focus was forgotten. Creating the customer's process map is a great aid, however, as all the further blueprinting can be referenced to it.

4.5.6 Linking the contact activities to support functions

The fifth stage of service blueprinting is to link the contact activities to support functions. Support processes are the functions that are completely invisible to the end customer: they have no contact with the customer

whatsoever. However, they do serve the customer-focused service execution and are required for the service to function properly. (Bitner et al., 2008)

There are two requirements for the customer to be able to use a new version of the software: they need new installation codes and new software. The latter is handled by contact employee actions or by the customers themselves, but the process of creating activation codes happens in the support processes. A new code requires creating a conversion document, as the product features from an old version have to be mapped to the new environment. The new code is then created. After this the new information is stored in the CRM system.

In the case of the training service, the first support process is to create a work order document. This serves as a means of booking the consultant and defining the requirements for delivering the service including pricing details. In the future, as the training services are standardized to a greater extent, this document can be unified as well. The later steps excluding the storing of feedback is then carried out by the contact employees. It was decided not to include the creation of training materials in this process, as the wish-state is to handle that outside the scope of a single training service.

4.6 Tangibilizing the offering and adding physical evidence

Adding physical evidence to the service, or tangibilization, is the last step of blueprinting. It's also the third dimension of productization. As discussed in the theory, it is often said that services can't be stored, but especially the physical manifestations of them are stored and are manageable entities that should be thought through when delivering a service.

In the software upgrade service four different physical aspects were identified. The first, many times a crucial aspect is the website from which the customer can find information about the software and services. The

second physical manifestation is the actual form which has to be filled in order to find out the technical details about the customer's environment for installing the new software version. The question of whether it's a paper or an online form has to be decided. An email template is currently used, but dedicated survey software could be used in the future to store the answers. Based on those results the service can be refined and improved later on.

The third aspect is the instructions for installing the user client software. This is done with a PDF file and a TXT file containing the technical details and screenshots for installing the software. The final physical aspect of the software upgrade service is the feedback form, which didn't previously exist at all. This was decided to be done with surveying software, again, to store the answers for further improvement.

It's important that all physical material shares the QPR brand, the basic layout and the overall feel of the whole service should be coherent. At the time of the interview, comparison tables for different product versions weren't available. Physical material to support the decision to upgrade was then created and is now available for the sales personnel to use.

The training service shares the website as a physical manifestation of the service, especially if the training can be ordered from the site later on. Currently only general software training held on QPR's grounds can be ordered online. The additional physical aspects include, perhaps much more significantly, the venue in which the training is held, the training slides, the computers with which the training is conducted, and finally the coffee break or lunch area where the feedback is unofficially gathered. The venue should therefore support both training and informal communication and maintain the QPR look and feel. It's also important to note that the QPR's personnel contribute to the physical manifestation of the service: their look and attire affect the feel of professionalism—or the lack of thereof.

As discussed in the theory, by understanding the physical and tangible aspects of a service potential failure points are easier to recognize. Scoping the physical aspects of the service also makes it easier to manage them, as it's easy to overlook such details if they aren't explicitly mapped out.

As the theory suggests, creating simple physical items, such as cardboard boxes that symbolize a service help the customer understand that it is a concrete entity with concrete benefits. These are still mostly missing from this service blueprint created for QPR in this research. However, now that the existing physical aspects of the service are identified, it's much easier to add elements that are missing and that would benefit either QPR's personnel or the customers.

4.7 Summarizing the benefits and challenges of service blueprinting

Creating the service blueprint helped the case company understand that various aspects of the service design were lacking: firstly, QPR's process mappings were created only from the company's point of view and they largely ignored the customer process. Second, the tangible aspects of either service were not thought of at all. By doing this, many individual components that help the customer understand the benefits of the service, such as the comparison table of different software versions, were created. Third, the blueprint helped standardize and communicate the delivery processes both from the internal and external points of view highlighting the benefits discussed in the theoretical part. By defining the processes and work instructions it's possible to scale the service production more easily as new employees can understand the service faster and more easily.

The blueprinting exercise also confirmed that creating a service blueprint of a consultancy service is possible. While it has to be noted that the service blueprinted during the case study is relatively simple, it still shares many of the characteristics of more complex consultancy services listed in the second

chapter of the study. By dividing the training service into four different entities, it was also discovered that by modularizing a service, the aspects that were previously thought of as customizing were actually achieved through creating variety.

5 CONCLUSIONS

In the year 2010 almost 70% of Finland's GDP came from services and the role of services in the national product has been growing steadily from the 1950's (Elinkeinoelämän keskusliitto, 2012). Regardless of this, service innovation and service development have received much less attention than physical products. While services are becoming more complex and extensive, managing them becomes increasingly difficult. This research paper tries to shed some light on whether productization is a tool that helps tackle this challenge.

The aim of the study was to find out how consultancy services can be productized modularly through service blueprinting. The problem was researched through three sub-questions. First, the effects of professional consultancy services' characteristics to productization were studied. Then the main benefits and challenges of using service printing as a tool for productization were evaluated. Through this, an initial theoretical framework was created. The framework was finally tested in practice in the empirical part of the study. The real-life evaluation was two-fold: first it was tried if the overall framework applies to the case company's situation. Then a service blueprint was created of a selected service and its challenges and benefits were analyzed. The research methodology was qualitative, action research based participant observation method: in the first stage of the empirical study the research was mainly observatory, but creating the blueprint can be classified as "complete participation". This means that the researcher was present and a part of the community in which the study was conducted, and therefore complete objectivity was impossible to achieve. However, this allowed for more in-depth and tacit information to be gained from the organization.

The initial theoretical framework was compiled based on the dimensions of productization defined by Jaakkola et al. (2011): standardizing the offering,

systemizing and standardizing processes and tangibilization. There are various definitions for the term productization, some concentrate more on the organizational aspects of it, some on the knowledge sharing aspects of it. The findings Jaakkola et al. (2011) made in their study proved to be good building blocks for this paper, as they concentrate on the service development aspect of productization on a rather concrete level.

The concepts of modularization, service blueprinting and service blueprint's physical evidence layer were then connected with each respective stage of productization. The framework was evaluated in practice in the case study conducted for QPR Software Plc. It was evident that the theoretical framework had some value in real life, as the case company's situation reflected it well. QPR was in the stage of mapping out its complete service offering and their next step was to identify individual service modules from the service canvas: which mirrors the first stage of productization, as defined in this paper, perfectly.

The second phase of the empirical study was to evaluate service blueprinting's utilities in productization in practice. Service blueprint is a picture or map portraying the different aspects of service delivery. It starts by mapping out the customer's process during a single service. The steps in that process can be regarded as "moments of truth". After that customer process is mapped, the visible onstage and invisible backstage employee actions are connected to it. These include the steps in which the service delivery company is directly or indirectly in contact with the customer. Finally the support functions which support the employee actions to succeed in serving the customer are mapped and tangible elements of the service are identified.

It was discovered in the empirical study that blueprinting's main virtue is that it facilitates discussion. It's a tool that provides a concrete picture of an intangible service. With a blueprint potential pitfalls and problems in service

delivery can be discovered and tangible elements of a service can be identified. This helps improve the service experience, manage the service process and increase customer satisfaction. Blueprinting is also a tool that allows for knowledge sharing within an organization. In addition to that, by defining and communicating the service delivery processes to all stakeholders, it makes service delivery potentially more scalable and efficient, as almost anyone in an organization can deliver the service. This was one of the main reasons for starting the efforts of productization in the case company as well.

While service blueprinting is a great tool for systemizing and standardizing service delivery processes from the customer and company's internal point of view, it doesn't take into account the overall value proposal of a service. This should be done in the first stage of productization—standardizing the offering. It was also discovered, that services' tangible properties and their effect on customer experiences were largely ignored in the case company. By adding and managing physical properties of services, such as the venue in which the service is conducted, product brochures or the personnel's attire, the company can affect the perceived customer value. Also, by making physical artifacts of intangible services, they become easier to comprehend as individual entities that have concrete value.

The characteristics of consultancy services present many challenges for their productization. They are extremely heterogeneous and people-centric, they rely on individual knowledge and creativity, and their quality is subjective. As the cornerstones of productization lie on reproducible standardization, the juxtaposition is clear. To tackle the need of customization and the lack of standard elements in consultancy services, this paper suggests that modularization is a key element. By creating enough variety, the customer's needs for customization are diminished as their original needs are met by one of the standard elements offered. This was partly tested in the empirical part of the study, where the training service was divided into four modules.

However, balancing customer focus and standardization is always a challenge when productizing consultancy services.

The paper shows that tackling the challenge of whether to focus on an individual customer or to standardize can be aided by modularizing services. By creating variety the customer can choose small sub-components and build a solution that suits its needs from highly standardized modules. Thus, the both customer focus and the possibility to standardize the service remains.

5.1 Managerial implications

As Shostack (1982) suggested, designing consultancy services can be as complex as designing a jet plane but not nearly as much effort is put into designing those services. Productization is a multi-faceted concept: it involves both standardizing the offering and the delivery processes. In addition,

Regardless of the tools used for systemizing service delivery processes, the framework for productization, as presented in this paper, provides a concrete starting point for making services more manageable, scalable and efficient by the means of productization. It was rather evident, that both the existing literature and the case company see many benefits in productization: it allows service production to be more efficient, it allows for knowledge to transfer easily, it makes a service more tangible and concrete for the customer, so that understanding and buying doesn't feel like such a big risk.

Consultancy services are probably the most difficult services to productize, as they are extremely heterogeneous and people-centric. This is illustrated well in figure 3 by Fähnrich et al. (1999). Applying the framework created in this paper to simpler, more homogeneous services could be very fruitful.

Modularizing services helps tackle the problem of customization by creating variety. By giving the customer more options, he/she can build a package that fits their needs more specifically. If the services are properly modularized, all the small components, or modules, are still highly standardized and efficient to deliver. As Hänninen et al. (2012) point out, a trend in service production is end to end solutions, and final offerings combine multiple service components.

5.2 Theoretical implications

This research attempted to combine the concepts of productization, modularization and service blueprinting in the context of consultancy services to create a coherent framework for service productization.

The empirical study suggests that the framework is feasible and that the phases of productization: standardizing the offering, systemizing and standardizing the processes and tangibilization provide a solid foundation for developing services. It also suggests that service blueprinting is a valid tool for standardizing processes. It can't, however, be concluded that service blueprinting is the only feasible framework for service process standardization. Nor can it be said that the study is conclusive in that all services can be productized in the way the research suggests. Regardless, this paper does provide a feasible framework for service productization and sheds some light on what the term means in practice.

5.3 Suggestions for further research

Because of the delimitations of the research many interesting aspects of service development and productization were left undiscovered. One of the main limitations of the study is that the customer point of view was left almost untouched. Also, the forces that effect how the service offering is formulated were ignored in this paper. These forces include the company's

own strategy as well as external forces such as customer demand and competitors offerings.

The cyclical nature of service development was also not taken into account at all. The so called feedback loop that happens when a “ready” service is delivered to a customer and the company then receives feedback for further development was completely omitted from the study. As discussed earlier, productization is not a project, it’s a process.

Finally, this study is conducted from the view-point of consultancy services. As discussed, however, they are perhaps the most challenging of all services to productize, as they rely by default on individual knowledge and creativity and are highly heterogeneous. Applying the theoretical framework to services where the variety and contact intensity are low, such as teller machines, would probably be more fruitful than trying to standardize consultancy services completely. It should be noted, though, that most of these simpler services are already highly automated in the 2010’s, so productizing more complex services could indeed be of interest for many companies.

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APPENDICES

Appendix 1. Interview questions

1. Define your role at QPR.

Questions related to productization and service production

1. Define productization in your own terms and describe what it means for QPR.
2. Would you describe QPR's service production as standardized or ad-hoc?
3. Does QPR actively develop its services?
 - a. What are the expected benefits?
4. Is there a defined process for service development?
5. Has the service offering been defined?
6. How is service production measured at QPR?
7. How well is knowledge shared throughout the organization?
 - a. How reliant is the delivery of these services on individual knowledge?

Questions related to the services to be blueprinted

8. How standardized are the service processes for the software upgrade and training services?
9. How does the software upgrade service proceed?
10. How does the software training service proceed?
11. Is there ready-made material for the service delivery?
12. How long does the delivery of these services take?
13. Is customer feedback actively collected during service delivery?

Questions related to selling consultancy services

14. What are the biggest challenges of selling consultancy services?
15. Do the sales people have ready-made materials for all services?
16. What is the pricing of consultancy services based on?
17. How are the service sales measured?
18. Who is the customer of the software upgrade/training services?
19. What is the value proposal of these services?
 - a. Is it the same for all customers?
20. How much does the software upgrade/training service cost?

Appendix 2. Service blueprint of the software upgrade and training services

