MASTER THESIS -
INTERNATIONAL BUSINESS ECONOMICS

Improvement of business service innovation by customer integration

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Title page

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1 Introduction

Over the years most, if not all, focus within the literature on innovation has been put on the development of new products. Products have traditionally been the focal point in most business literature, and only lately have services been elevated to be of equal importance and hereby also becoming equally interesting for business researchers.

During the latter part of the 20th century the world has experiences a shift from being product-oriented to becoming primarily service-oriented, and the service sector is by far the largest sector, especially in industrialized countries.

As new businesses emerges every day, all companies have to be aware of the ever growing competition on all markets, as the globalized mindset of today means that competitors potentially can be situated all around the world. Hence it is important to nurse your business relationships, and make sure that the business continuously provides the most attractive product to the clients. Therefore listening to customer wishes, thoughts and ideas is crucial to keep a competitive advantage and maintain or strengthen ones current position and be successful.

Innovation is an essential part of any company that wants to keep a continuous growth, however even though the service sector has experienced large growth, the focus within innovation literature is still primarily focusing on how to innovate in product development. Especially the literature is lacking research on innovating services with a customer focus.

Thus this thesis will focus on innovation in services and how to actively integrate customers in this process to shape the services provided to the customer/market demands, and hereby gain a competitive advantage. By integrating customers the specificities of the services also become clearer for customers, which is important because of the intangible nature of services.

The research will be conducted deductively by screening existing theories within the fields of business services, innovation, and customer involvement, and afterwards combining the findings within the different literature and hereby create a model of

customer integration in business service innovation. The managerial implications of the findings will be assessed critically, thus outlining how to implement the model in a business.

The thesis is solely focusing on business services, meaning consumers will not be assessed as these cannot be closely integrated in an innovation process, thus business to consumer services has no relevance for the research. All research is based solely on theory, meaning it has not been applied in practice, meaning unforeseen practical implication might come up, if integrated in a company, however as the research builds on a strong theoretical foundation of already proven theories and acknowledged literature, the findings must still be considered fully valid and reliable.

2 Problem formulation

The following section contains a description and discussion of the background of the problem where importance of the service industry overall, business services in particular and the innovative activities in them are described. After that the problem formulation statement itself will be presented together with the research questions, which are addressed in this thesis. This is followed by a section related to the overall structure of the project.

2.1 BACKGROUND OF THE PROBLEM

Services have now grown to form the largest sector in terms of generating output in most industrialized countries. For example in Denmark the service sector in 2008 constitutes approximately 75 percent of the GDP, according to "Brancheanalysen 2009" from Dansk Industri (DI website). Moreover every company engages in various service functions. In today's competitive environment, companies are confronted more and more with declining margins on their products. Looking for other ways to make profits, some of these companies decide to render additional services to the physical product they offer. Services have become a crucial factor in the process of creating superior value for customers.

That is why industrial services are becoming increasingly important to manufacturing firms for a number of reasons. They ensure proper product functioning, provide additional growth opportunities, and offer attractive margins. To improve profitability it is not enough to sell just a product; the real impact on profitability comes from exploiting downstream opportunities, by providing the customers with products such as financing, maintenance, spare parts and consumables. Companies are also faced with consumers and industrial customers emphasizing the accomplishment of high degrees of customer satisfaction in their exchange relationships. By rendering good services or

improving the present level of services to customer standards will minimize the chances that companies will lose business due to inadequate services. Customer services can indeed be used as a competitive tool.

Despite the demonstrated financial benefits of product-related services, most product manufacturing firms fail to systematically innovate these. The critical role of innovation has long been recognized in physical goods; however, the development of innovative services has received much less attention. Meanwhile intense competition, changes in technology and an economy that increasingly relies on services for expansion has made the successful development of new services a key to success for many firms. But only a limited number of manufacturing firms use formal approaches to service innovation and have implemented necessary experience. The unit of analysis is mainly traditional service industry. Very little attention has been paid to the innovation of business services in the context of product manufacturing companies.

There is a big potential of increasing customer satisfaction by improving customer service. Many companies have begun to involve potential users in the innovation process during recent years. Involving users in new service development is an area that is much less examined than the development of tangible products.

2.2 PROBLEM FORMULATION AND RESEARCH QUESTIONS

The problem formulation of the thesis is:

"How can business service innovation be improved by customer integration?"

This thesis will investigate innovation in services, more precisely innovation of business services with customer integration. Thus, there are three main key words in this thesis which delineate its focus: business services, innovation, and customer involvement. Thus the main task of the thesis is to create a model of customer integration into the process of business service innovation.

This paper aims to answer the following research questions:

1. How may the concept of business services be understood and defined?
2. What is innovation in services, and how does it differ from innovation in products and processes? What are the specificities of innovation in services?
3. How can the concept of user-involvement be applied into the process of service innovation?
4. How can the model be implemented in organizations?

2.3 PROJECT DESIGN

In the following section the structure of the project will be described.

After the introduction the problem formulation and research questions are presented in a chapter and this will then be followed by the methodology. This chapter includes a presentation of the relevant paradigms, a description of the chosen methodological approach, and research design.

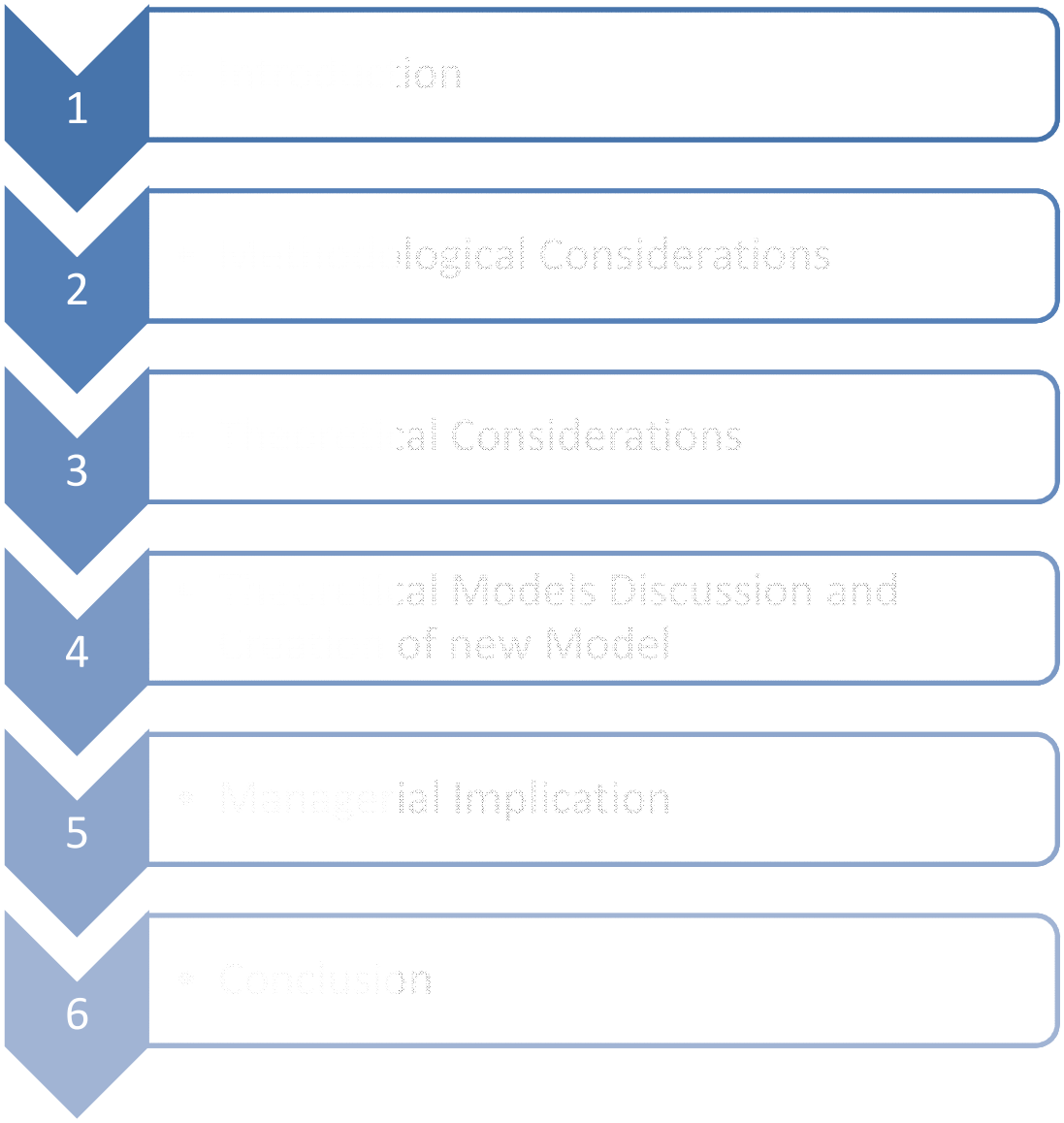
After that the project continues with a theoretical section, where different authors' explanations and the thesis' understanding of three main concepts: business services, innovation, and customer involvement, are presented. Also different models of innovation processes, service innovation processes and customer integration into these processes are described in this section. The main outcome of this chapter is a model of customer integration into the process of business service innovation based on the theoretical models discussed in previous sections.

Next section is concerned with the managerial implication of the presented model, meaning how companies can implement it in their business model.

Finally the most important aspects and results are presented and discussed in the conclusion of the project.

Thus the project design is illustrated bellow.

Figure 1: Project design



3 Methodology

In this chapter, firstly there is a discussion on the authors' meta-theoretical assumptions about the way the world is seen, the process of knowledge acquisition and how they influence process of research. Then a description of the involvement of theory into the project is provided and the decision on inductive/deductive tension is made. After that the implemented strategies on carrying out research and explaining the choice of grounded theory is illustrated. Then the research choice between qualitative and quantitative techniques and procedures is described, and at the end of the chapter the hermeneutical circle as research technique and limitations of the project is presented.

3.1 META-THEORETICAL ASSUMPTIONS

3.1.1 ONTOLOGICAL CONSIDERATIONS

The research philosophy contains important assumptions about the way in which one view the world. It is concerned with nature of reality (Saunders et al., 2007). According to Bryman and Bell (2007) social ontology concerned with the nature of social entities or other words whether this entities have reality external or internal to social actors. This question divides ontological considerations into two positions: objectivism and constructionism. Objectivism is an ontological position, which considers social phenomena as independent of social actors, external to them. In the other hand, constructionism considers social phenomena as created by social actors thus influenced by them.

Hence as the process of innovation will be considered by the authors from different points of views of other authors, it is obvious that the authors have constructionism as the ontological position. The shape of the process is different of different authors and depends on their assumptions of importance of the range of stages in overall process.

3.1.2 EPISTEMOLOGICAL CONSIDERATIONS

Epistemology concerns what constitutes acceptable knowledge in a field of study (Saunders et al., 2007). An epistemology is an assumption of researcher about process of knowledge acquisition (Bryman and Bell, 2007). Question here is whether or not the social world can and should be studied according to rules of natural science. Two contrast epistemological considerations appear in this case. Positivism is a position of imitation principles and procedures of natural science. Interpretivism requires a different logic from that of the natural science because of influence of researches on the process.

As outlined in the research objective the aim of the study is to build a model of business service innovation process based on the others model and taking the best ideas from these. This requires understanding of the process which will be gained from different points of view sometimes opposite. Then a model will be created based on the authors' assumptions on relevance of activities of the process. Thus epistemological assumptions towards the problem in hand are interpretive.

3.2 RESEARCH APPROACH

This paragraph is about how the use of the theory was involved into the project to take a more informed decision about research design and will help to evaluate those research strategies and choices that will work.

Next step is a description of existing types of approaches. Deduction – is to develop theory and hypothesis and design a research strategy to test the hypothesis. Induction – is to collect data and develop theory as a result of data analysis (Saunders et al., 2007).

According to the problem formulation and that the thesis is subjective in its assumptions induction suits the project better. There will be collected data and developed theory as a result of the data analysis.

3.3 RESEARCH DESIGN

Research design – is a general plan for how the thesis will go about answering the research questions. First step of the research design is the decision on research strategy.

3.3.1 RESEARCH STRATEGY

There are 7 research strategies: experiment, survey, case study, action research, grounded theory, ethnography, archival research (Saunders et al., 2007). Some of them obviously fit in deductive approach, others in inductive. None of these are superior to others and a choice should be made in accordance with their ability to answer research questions and meet the objective of the research. There can be three main purposes of research: exploratory, descriptive, and explanatory. The aim of exploratory research is to clarify understanding of a problem, which can be done by literature review, interview of experts in subject, or by carrying out focus group interview. Descriptive research intends to give clear picture of the phenomena. The aim of explanatory research is to establish causal relationships between variables in order to explain these relationships (Saunders et al., 2007). As the aim of the research is to understand the process of business innovation in order to give suggestions on how to improve it, so it can be viewed mainly as exploratory research. Thus the thesis is using descriptive studies to illustrate some phenomena, and explanatory research to demonstrate influence of customer integration on the innovation process.

Grounded theory is more appropriate for this research, because of the thesis' research questions and level of ambition, and it is the best example of an inductive approach. In grounded theory the data collection starts without formation of an initial theoretical framework. Theory is developed from data generated by a series of observations (Saunders et al., 2007).

3.3.2 RESEARCH CHOICE

Second step of the research design is research choice or qualitative/quantitative debate. This is considering the way in which you choose to combine qualitative and quantitative techniques and procedures (Saunders et al., 2007). There are two types of strategy implemented by researches: qualitative and quantitative, which distinguish in terms of the role of theory in the research, epistemological and ontological considerations. Quantitative research emphasizes quantification in the collection and analysis of data while qualitative emphasizes words (Bryman and Bell, 2007). Mono method is when you choose single data collection techniques and corresponding analysis procedures. Multi-method on the other hand is using more than one. Multi-method quantitative study collection is quantitative data using 2 types of collection techniques and quantitative analysis procedures. Multi-method qualitative study collection is qualitative data using qualitative and quantitative collection techniques and qualitative analysis procedures. Mixed method – both qualitative and quantitative data collection techniques and analysis procedures are used in a research analysis (Saunders et al., 2007; Kuada, 2008).

Current views on the debate can be grouped into three categories according to Rossman and Wilson (1985). Purists do not mix methods because of the incompatibility of "mixing" paradigms. Situationalists adapt their methods to the situation, and pragmatists believe that multiple paradigms can be used to address research problems. In the thesis the authors has taken the position of the purists, choosing to collect qualitative data using qualitative and qualitative analysis procedures.

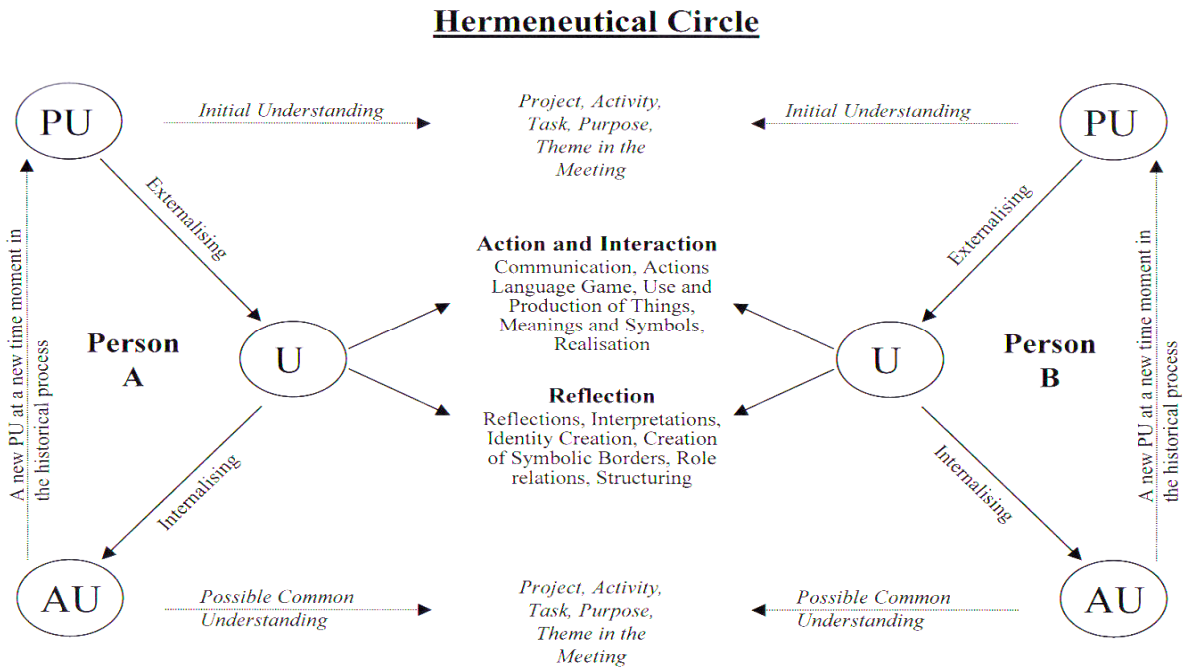
In this regard, since the focus of the study is to create a model based on the understanding importance of different activities in the innovation process, it will be appropriate for the study to use qualitative research. Qualitative research will provide deeper understanding of this phenomenon.

3.4 TECHNIQUES AND PROCEDURES

3.4.1 THE HERMENEUTICAL CIRCLE

As researches are getting affected by the world they can be controlled by outer factors and common sense. The epistemology in the interpretative approach says that objective knowledge is impossible. On the contrary subjective knowledge is created. The reason for this is that it is impossible for the scientist to withdraw himself from the world which in being investigated, and therefore it is impossible not to create bias. The scientist will always have pre-understanding of the subject for the investigation based on society, history, culture and the scientist's personal life. Afterwards you can make a critically reflection to try and eliminate some of the failures. All knowledge is therefore created through interaction between our own experiences and the total amount of experiences we have gathered through time with others. This knowledge is called a social construction. This is created in a dialectical process where all participants both represent a subjective and objective world. The participants will on the same time be a part of several social constructions, and will therefore be influenced by these, but also they will affect the constructions (Abnor and Bjerke, 1997). To demonstrate this process the hermeneutical circle can be used. An extended version of the circle is illustrated below.

Figure 2: The hermeneutical circle



Source: Svane, 2006

The hermeneutical circle is both a way of thinking of how the world can be viewed and how knowledge can be created, but also a real working method on how the research can be conducted (Svane, 2004). The figure builds on Heidegger's hermeneutical circle. This means that the part-whole relation is being moved into the interpreter and will therefore become a question of the relation between the interpreter and the observed object.

The circle has three central areas. The first area starts with a pre-understanding (PU) about which the world/whole is build. This pre-understanding is determined by prejudices and these decide how we interact in the world and are included in interaction in the hermeneutical circle. They are necessary for interaction with others, but they can be both productive and unproductive. If they are valid they make the interaction between other people more understandable and easier and are therefore productive. If they are not valid they can cause misunderstandings and are therefore unproductive. These prejudices are tested through practical attempts and should thereby create an understanding (U). This happens through an interaction with the outside world (Svane, 2004). This process is mutual and has to happen from both integrating parts. After the

individuals have received new experiences, and thereby have achieved a new understanding they will reflect and hereby create an after-understanding (AU). The individual has gotten a new mental map, because the after-understanding in a following interaction/hermeneutical circle would create the individual pre-understanding.

In so doing the circles continues and creates a dynamic process and it would be possible for the integrating people to create a common understanding. There is of course a better chance for this to succeed the larger the amount and duration of interaction between the actors. The hermeneutical circle and the social construction are connected in the way that the hermeneutical circle can change the social construction and simply create a new, which is adjusted to your after-understanding. Hereby the prejudice in the social construction becomes more valid and therefore more productive.

The pre-understanding of this thesis was based on the authors' knowledge about services overall and particular on business services. It was believed that innovation services are a quite undiscovered zone and together with the assumptions about importance of innovation in the service industry it made the authors interested in possibilities to create new knowledge about it. Next the assumption was about presence of product and process features in services which hinted that process of services innovation can have some commons with product and process innovations. This led to discovering trends in new product/process development. Also it is believed that this group of services has features that distinguish it from customer services and thus process of innovation in this area could be different. The assumption about importance for companies working with services in B2B market to constantly innovate in what they are doing in order to satisfy needs and desires of their customers fully directed the focus to business services. The last assumption was about the great role that customers can play in process of business innovation and possibility to include them into this process in order to increase performance. All of these assumptions were built on previous knowledge about this area gained from lectures, previous research projects and preparation for the thesis writing reading.

The understanding is a research process itself. Based on the pre-understanding about research area the authors were involved into the process of proving/rejection of the previous knowledge. First step was to start with theoretical description of features of services to find out whether they have specific features that can influence process of

innovation. Then an investigation differences between customer and business services was conducted. Next step was exploration literature on business service innovation in order to get trends in this area, good and bad examples of performing this process, factors that can enhance outcomes of new service development process.

Further literature review on innovation processes in pursuit of models that could possibly be used for business service innovation was screened. A model of absorptive capacity that is used in the process of knowledge creation and the transformation into products and services was found. This process suits to the process of innovation. Then it was discovered that different companies have different capacity to knowledge generation and exploitation, which is based on their approach to adapting to environmental changes. By combining the model of absorptive capacity with classification of organization according to their way of adaptation a new model was created, which presents the after-understanding of the innovation process.

Hereafter the literature on customer integration into the process of innovation was explored. Two theories are described, market orientation and open innovation, to support the assumption of the importance of customer involvement. Then literature about possible ways of integrating customers was reviewed, and the understanding of this process allowed the innovation process model to be altered with the idea of contribution from customers, thus completing the after-understanding of innovation process.

3.4.2 LIMITATIONS

The project has several limitations, which here will be described. The limitations are simply areas that could be interesting or relevant for the thesis and problem formulation, but for various reasons has been sorted out because of practical implications, unavailable data, methodological choices, relevance for the thesis, etc.

Services can overall be divided into two different categories: services for businesses and services for consumers. This thesis wants to focus on the professional business to business market, thus consumer services will only briefly be touched upon. As the

problem formulation only focused on the business part of services, and then this will not mean anything for the outcome of the thesis.

The project is purely theoretical, meaning no empirical consideration has been in use for this thesis, so no data such as statistics, cases, interviews, etc. has inflected the outcome. Instead various theories are elaborated on and combined or evolved. All the theories are constructed from empirical studies, but still it has to be considered that the findings in this thesis have not been applied to the "real" world. As long as the outcome of the research is assessed critical by being aware of the limitations that come from strictly theoretical sources, there is no reason why a solely theoretical approach cannot fulfill the aim of the thesis.

4 Features of business services

This chapter has the purpose to define features of business services, by firstly elaborating on services in general, and then separating services into smaller groupings, where the segments relevant for this thesis can be getting a more thorough examination. Finally traits of the market of interest for this thesis will be presented at the end of the chapter.

4.1 SERVICES

Services are throughout the literature separated from tangible goods by a number of unique characteristics, there are four main features, which are consistently cited (Zeithaml et al., 1985): Intangibility, Inseparability of product and consumption, Heterogeneity, and Perishability.

It is universally agreed by authors within the field of services, that *intangibility* is the most fundamental difference. Intangibility, according to Bateson (1979) is the critical distinction in goods-services from which all other differences emerge. Since services are intangible they are hard to price and impossible to store. Besides the intangibility also make patent protection unattainable. Finally since a given service is intangible the product itself can be hard to explain and communicate to potential customers. For marketers intangibility means they might have to focus on creating a strong organizational image while trying to sell a specific service and at the same time stress whatever tangible cues there might be.

Inseparability of production and consumption describes the concurrent production and consumption, which characterizes most services. While goods are first produced, then

sold and then consumed, services are sold first and then produced and consumed simultaneously (Regan, 1963). Many services also force the buyer to be in close contact with the production process, thus making production and consumption inseparable. A problem which might come up is the difficulty of mass production of services with high inseparability between the production process and the consumer. Solutions to eventual problems could be training of more contact personnel and using multisite locations.

Heterogeneity deals with the potential for degrees of variability in the performance of services. It can differ from customer to customer, from producer to producer, etc. Different employees may have slight differences in their interaction with customers, meaning the difference of behavior can affect the consistency of the service. However, also the service provided by the same employee, but on different days might just as well differ (Langeard et al., 1981). It is suggested in literature that marketers and businesses can go in two directions to solve eventual problems; either provide more individual customization or simply industrialize the provided services.

Perishability describes how a service cannot be saved or inventoried (Bessom and Jackson, 1975). As services are unable to be stored, businesses often have trouble synchronizing supply and demand, since any unused capacity will be lost forever and impossible to reclaim. The challenge here is to make adjustments to both demand and capacity simultaneously to obtain a closer match between the two.

4.2 BUSINESS SERVICES

Services within manufacturing companies are not something that traditionally has been focused on. However, it has long been a fact within management literature that manufacturing companies could benefit from integrating services into their core product offering.

There are several reasons for companies to do this. First of all, there are the economic arguments. It is clear, that significant profits can be generated from an installed base of products with a long life cycle (Potts, 1988; Knecht et al., 1993). Also, services tend to give a more stable source of profits, as they are much more resistant to the economic

cycles, than investment and equipment purchases (Quinn, 1992). Besides that is the simple fact that customers are demanding more services. And finally there is the competitive argument. Services are much more difficult to imitate, since they are less visible and more labor dependent, and thus becoming a sustainable source of competitive advantage (Heskett et al., 1997). Even though, far from all manufacturing companies is focused on services (VDMA, 1998).

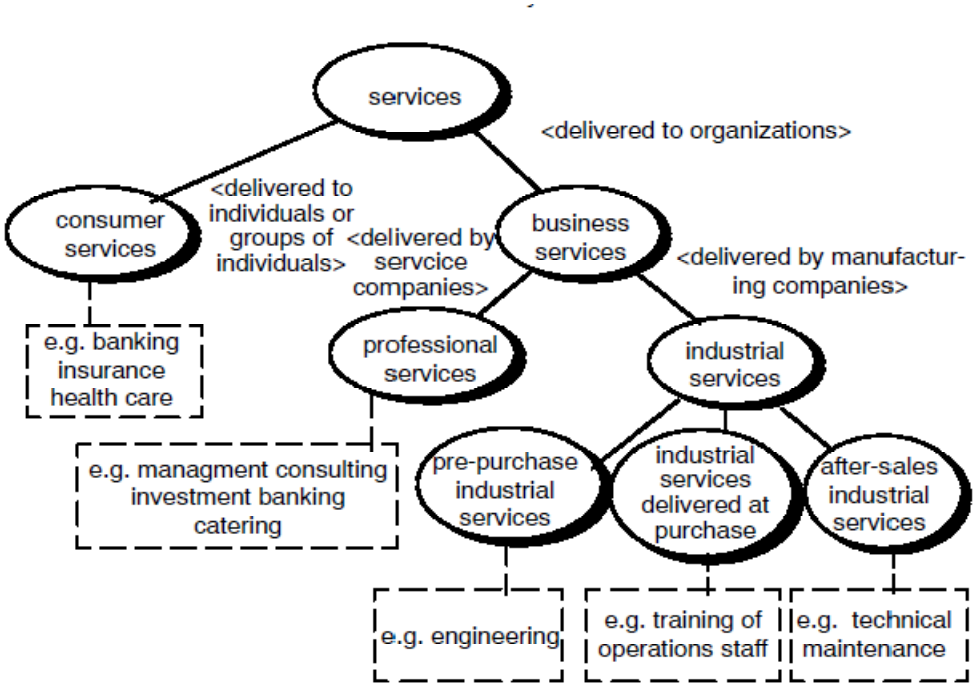
There can be several reasons to this. First of all it is a huge change in a company structure, suddenly to engage in service development and supplying. Transitioning from product manufacturer into service provider constitutes a massive managerial challenge, throughout the whole company. Services require organizational principles, structures and processes that will be new to most product manufacturers. Not only are new capabilities, metrics and incentives needed, but also the emphasis of the business model changes from transaction- to relationship-based.

To develop this new set of capabilities the company will have to divert financial and managerial resources from manufacturing and new product development, the traditional sources of competitive advantage for the organization, into the development of services.

Another issue a manufacturing company can experience is that on one hand, increasing service quality and scope might extend the product's useful life, thus reducing its replacement sales. On the other hand, increasing the quality and durability of products might reduce future service revenues. This can of course make it hard to manage these two different markets as they are so closely connected.

Almost all manufacturing firms provide services to sell and support their product, meaning they are already in the market of product-related services. However, those services, have traditionally grown in different parts of the organization, are fragmented and considered an unprofitable necessity to sell the product. In manufacturing firms, services are often just thought of as add-ons which are just a necessity to have to satisfy customers, and initial services (installation, commissioning, etc.) are frequently "given away" during the negotiations to sell the product. At the core of this cultural transformation, then, the manufacturing firm must learn to value services and how to sell, deliver and bill them.

Figure 3: Classification of services



Source: Homburg and Garbe, 1999

A taxonomy of different services will now be presented. The taxonomy is based on thoughts by Homburg and Garbe (1999). Firstly it is important to distinct between the two different groups of which services can be provided to. Either the service is provided to an individual or group of individuals, called *consumer services*, or the service is provided to an organization, thus called *business services*.

As the focus of the project is on business services, there will not be any in-debt description of the consumer services, as they are irrelevant for the paper.

Business services can again be divided into two different sub-categories;

- *Professional services*, which are services, provided by a service company, typically advisor services like for instance banking, consulting, legal, accounting, advertising, etc.
- *Industrial services*, defined as services provided by a manufacturing company, which are mostly are maintenance and repair services, for instance equipment repair, janitorial services, which are usually supplied under contract.

Furthermore, the industrial services can be divided into three categories:

- *Pre-purchase industrial services*, which describes every service offered before the actual purchase by a client has been made. Examples of this would be engineering, counseling, etc.
- *Industrial services delivered at purchase* will consider every service delivered at the time of purchase, or in immediate continuation of such. This can be services such as training of staff, installation, or testing.
- *After-sales industrial services*, which is everything that a manufacturing company offers to its clients after the purchase has been made, like for instance technical maintenance.

Besides it is extremely valuable for businesses to be able to classify the services on the business market and hereby help develop greater sophistication within the service marketing provided (Lovelock, 1983). By using classification systems a business can gain new insight into individual service types and help emphasizing the usefulness of differentiated service strategies for individual market segments. On the other hand, by not using classification systems businesses risk losing competitive advantages, hence they are simply not aware of these.

By determining individual traits for different segments of the market, these traits can be used to position and distinct the business from its competitors. Marketers can use classification systems to, based on various service characteristics, identify competition and allow the business to better target specific markets, which require distinct variants of the services provided. The more accurate the classification systems reflect the attributes of the service the easier the business can position the service and gain a competitive advantage on the market.

A customized serviced package can aid a business to distinguish itself from competition on the market, build long-term relationships with customers by improving customer satisfaction and hereby increase the customer loyalty as well.

Business services can be classified according to these characteristics (Boyt and Harvey, 1997):

1. *Replacement Rate*, the frequency of need for the service being provided to the customer.
2. *Essentiality*, regards the necessity of the provided service relative to keep or make a product function. If for instance, a product needs regular service to able to operate properly it obviously means that the service is of high essentiality. However, an essential service might be of low risk, thus an alternative service provider could take over, especially if the provided service is a simple routine. If it is only a routine service the receiver of the service can easily schedule the service at a no-critical time and a number of service providers can be evaluated for this service.
3. *Complexity*, how great a necessary technical training and overall difficulty is needed to provide the service to the customer.
4. *Personal Delivery*, if the service needs to be delivered in person by the provider.
5. *Credence Properties,* this refers to distinct parts of the service that might make the product complicated to understand, and thus also hard to evaluate. In case of high credence properties, confidence in the service provider is extremely important, as it is unlikely that the customer will fully understand the product, and much less be able to make an objective assessment of the delivered service.

Table 1: Service categories

Service categories			
Service characteristics	**Elementary service**	**Intermediate service**	**Intricate service**
Replacement rate	High	Medium	Low
Essentiality	Low	Medium	High
Complexity	Low	Medium	High
Personal delivery	Low	Medium	High
Credence properties	Low	Medium	High

Source: Boyt and Harvey, 1997

As the table illustrates, *elementary services* are related to frequently purchased products, which are not essential to the business consumers' primary functions, they have low complexity, and do not require formalized service providers. Examples could be products such as electric and gas utilities and telephone services.

Intermediate services require a more complex set of service components, thus the service provider has to become deeper and more directly involved in supplying the service. Examples of intermediate services would be equipment repair, equipment leasing, transportation, and other repair-related services.

The *intricate services* require a maximum level of service and customer awareness. In this category you will find providers of services such as consultants, designers, surveyors, architects, which all reflect high levels of credence properties, require personal delivery, are highly complex, and have a low replacement rate.

4.3 BUSINESS-TO-BUSINESS

The expression business-to-business (B2B) refers to the relationship between two businesses in which the end consumer is not involved. This is in contrast to business-to-consumer (B2C), the other known business relationship, which exists between a company and the end consumer.

Therefore, as a professional company, there are two different markets, where the focus can be directed to: the business market and the consumer market. Although, businesses do not necessarily have to limit themselves to operating on one of the markets, however there are obviously huge differences between the two markets, thus the marketing approach to the two markets also should be different. The two markets will in most cases differ drastically from each other, regarding for instance legislation, customer behavior, etc. There are also similarities between the two markets, like for instance the essentiality of building a strong brand.

However, where B2C marketers focus on targeting a group or a segment of a market with its marketing mix, whereas B2B marketers are much more focused on building

individual relationships with other companies, as the sales process almost always is longer with more steps than on the B2C market. Within B2B typically more people are involved in the buying process. Another big difference is that where businesses buy when they because of a need, where consumers often buy because of a want.

In today's world of competitive business within all industries it is often not sufficient to have a good product and a competitive price and process in itself. If a company wants to compete on the B2B market they need to focus optimizing their B2B marketing strategy, to better identify, locate, segment and target the B2B customers that are most important for their business.

4.4 BUSINESS SERVICE INNOVATION

For a long time services was looked upon only as secondary when it came to innovation, however as more research has been done in the field of innovation and especially the field of service innovation, the importance of this field can clearly be seen.

Studies have shown that many services do not necessarily derive from R&D departments, and many pure service companies do not even have R&D departments. Many service innovations are not even the result of a deliberate activity, but rather the innovations simply come together based on a customer's wants and needs, meaning often it is not until after the actual "creation" of a new service that the innovation is realized.

Also the classic way of classifying innovations into either product, process or organizational innovation is misleading when it comes to services, as they are both products and processes at the same time. At the same time the very nature of services makes it hard to detect improvements in a service compared to improvements in a physical product. In general service providers often cannot specify if they made a new innovation as every service provided often is unique in itself. A lot of times service companies do not even use the word innovation, but talk about how to heighten their

customer satisfaction, improve their quality, when they are trying to renew their products (Sundbo & Gallouj, 2000).

Nowadays, for most companies it is critical to develop new successful services, thus here will quickly be described four main areas that managers should look into while developing and marketing new services (Brentani, 1991).

- *Proficiency in new service development* covers the activities used to create and launching new services, and the quality of these. These activities could be market studies, research financial analysis, screening of ideas, etc. Also pre-launch testing of the new services to examine customer responses, as well as testing the whole service setup for delivery and production of the service, can be focused on. The evaluating process should not stop when a service is ready to launch, but instead some post-launch testing should be carried out as well.

  The role and effectiveness of management also must be considered, as it is important that management are capable of and understand the significance of exploiting all expertise within the company, for instance, by securing communication between the different departments and employees to optimize the service innovation. Management also must be focused on implementing marketing the newly developed services internally in a company, so everybody is in the same page regarding the company's offering to customers.
- *Project synergy*, which describes the synergy between the innovation project and the company's general capabilities and resources. By this is meant for instance managerial expertise, overall skill level among employees, state of facilities (are they ready to provide a certain service etc.), and financial situation. As a company you have to be very aware when launching a new service in a field you have not provided services in previously and also if you are approaching a whole new market, as this is unknown territory for the company with new clients and new competition.
- *Market characteristics* describe the market a company is operating upon or entering. The competiveness is important to know about; the amount of competitors, the size of these, the price sensitivity and how often new services are introduced. Obviously, the better a new service fits in on the market, the better it will be received and the more successful it will be. However, it might not always be the perfect strategy to simply target the whole market, but sometimes

a better approach might be to aim specifically at one or two big potential clients on the market, and then try to tailor the perfect service for these. Clearly the key is to be aware of what the market wants and keep developing the business services, to stay on top of the market and maintain ones position.

- *Nature of new service offering*, it is naturally important to know what the nature of the new service means for a company; is it something that requires a lot of highly skilled personnel, or is it more equipment-heavy and thereby demands investments in machines and facilities.

  How the market perceives not only the services offered, but also the company offering the services, is another key element. If a company is known for and perceived as a provider of the newest, most innovative services, this gives the company a strong competitive advantage. In the same way, if a company is known for great quality of their service products, it will help them position themselves on the market strongly. Finally the overall service experience is also something that will help set a company apart from its competition, for instance by offering a fast, smooth, reliable and efficient service.

5 Ambidexterity

This section starts with a description of the organizational types according to the way they adapt to the environmental changes. Then an overview of ambidextrous organization as ideal type toward which companies should aim in order to succeed in innovation process is provided. This is followed by a section related to absorptive capacity as capability to gain competitive advantage, one of which is innovativeness. This concept then taken as a base for the model of innovation process improvement.

5.1 ADAPTIVE STRATEGIES TO THE ENVIRONMENT - ORGANIZATIONAL TYPES

Miles and Snow (2003) describe four alternative forms of adaptation to environmental change and uncertainty.

They developed a general model showing the process of organizational adaptation which is called adaptive cycle. The model presents three broad "problems" organizations face and must solve in adaptive process: the entrepreneurial problem, the engineering problem, and the administrative problem.

The entrepreneurial problem in a new organization deals with defining an organizational domain: a specific good or service and a target market or market segment. After acceptance of a particular product-market domain in an ongoing organization the need for further entrepreneurial activities does not disappear, but it remains a top-management responsibility to identify new opportunities.

After the entrepreneurial problem is solved management's solution about appropriate production and distribution technologies, new information and communication formation, control linkages should be operationalized. The creation of a system dealing

with this solution is a task from the engineering problem, which will be solved finally during the administrative phrase.

The administrative problem involves reduction of uncertainty within the organizational system, rationalization and stabilization of activities, solving the entrepreneurial and engineering problems. Also it deals with processes of continuous organization innovation.

Organizations employ different strategies to solve their entrepreneurial, engineering, and administrative problems. Miles and Snow's (2003) research helps to group all organization into three strategic types: Defenders, Analyzers, or Prospectors. They differ in means of chosen market strategy, technology design, structure, process, and relationships among these variables in dynamic interaction with their environment.

The Defender is an organization with stability as the main solution to its entrepreneurial problem. They produce a limited set of products for a narrow segment of the potential market. This is due to their entrepreneurial problem which states as how to seal off a portion of the total market in order to create stable domain. The Defenders aggressively compete for their domain by low prices or high quality at the same time close the eyes to developments and trends or perform just limited development.

The Defender's engineering problem, which is how to produce and distribute goods and services as efficient as possible, makes it invest a lot of resources into technology. To reach efficiency the Defenders usually prefer to deal with single core technology which they continuously improve and sometimes tend to vertical integration (Miles and Snow, 2003). Thus Defenders grow mainly through market penetration and involved in little new product/service development. They usually confine by simple extension of new product line. And even when they create new product they lack essential organizational capabilities for successful new product management. Overall defenders focus less on new product development than two other groups of organization (Slater and Narver, 1993).

Defenders define their administrative problem as how to achieve strict control of the organization in order to ensure efficiency. This is solved by "mechanistic" structural and process mechanisms like domination of financial and production experts in top-

management, limited scanning of the environment, intensive cost-oriented planning, functional structures with extensive division of labour, centralized control etc.

The Defender strategy makes it difficult for competitors to shift company from its narrow niche and perfectly suitable for the environment of today's world. At the same time low capacity for exploring new areas can lead to ineffectiveness of such type of organization and inability to respond to a major market shift.

The Prospector's entrepreneurial problem is how to locate and develop product and market opportunities. This makes the organization an innovator in product and market development which sometimes sacrifices high profitability in race for high innovation capability. Prospectors usually define their domain as broad and in the process of constant development, adding systematically new products and markets to it. This type of organization regularly scans the environment for potential opportunities, trends and conditions making change one of the major competitive advantages (Miles and Snow, 2003). Prospectors as pioneers are looking for creation of innovative new products, sometimes having risk getting just short-term profitability. Growth through product development is important to the success of these organizations (Slater and Narver, 1993).

The Prospector defines its engineering problem as how to avoid long-term commitment to a single type of technological process. This is very consistent with its changing domain, which requires flexibility in its technology capable to serve both the organization's current and future product mix. To reach this organizations create multiple, prototypical technologies with low degree of routinization and mechanization.

Prospector's administrative problem – how to facilitate rather than control organizational operations – is an issue of its changing domain and flexible technologies. An administrative system of this kind is directed to organize and coordinate resources among numerous decentralized units and projects, which is possible with its "organic" type of structure-process mechanism. Components of this mechanism are domination of marketing and R&D experts in a top-management group, problem oriented comprehensive planning, tendency towards product and project structure with low degree of formalization, decentralized control, complex coordination mechanism, etc.

Even though this type of organization is effective and protected from changing environment due to product and market innovation, Prospectors have the risk of low profitability and overextension of its resources, inability to obtain complete efficiency, underutilization or misutilization of resources.

The Analyzer is the organization, which is situated between two extremes of a continuum of adaptive strategies formed by the Defender and the Prospector. The Analyzer combines the strengths of both the Prospector and the Defender, which lead to risk minimization and profit maximization. The entrepreneurial problem of the Analyzer is how to locate and exploit new product and market opportunities while simultaneously maintaining a firm core of traditional products and customers. They solve this by imitation of the most successful product and market innovations, which are developed by Prospectors, while making the greater part of the revenue from stable set of product and market like Defenders do. So Analyzer is the type of organization which is effective by ability to quick response to changes and efficient in operating in its stable product and market (Miles and Snow, 2003). Analysers as early followers take an imitative approach to new product/service creation and reach effectiveness through the addition of new products. Growth through product development is important to the success of these organizations although it is not the only one. They also utilize market penetration for this purpose (Slater and Narver, 1993).

The Analyzer defines its engineering problem due to the duality of its domain as how to achieve and protect equilibrium between conflicting demands for technological flexibility and for technological stability. This lead to a dual technological core: stable and flexible components of technology which reflects the engineering solutions of both the Prospector and the Defender.

The Analyzer's administrative problem is how to differentiate the organization's structure and processes to accommodate both stable and dynamic areas of operations flows from its domain and technology duality. They apply some version of a matrix organization structure to achieve a balance between the stable and dynamic areas of operation. The main features of administrative mechanism are domination of marketing and engineering members, followed closely by production, intensive planning concerning stable domain and comprehensive planning for the development of new

products and markets, centralized control in the functional division and decentralized in the product groups, extremely complex coordination mechanisms, etc.

While adopting the best practices of stability and flexibility Analyzers risk inability to move entirely in one of the direction, thus facing risk of inefficiency and ineffectiveness in case of failure of keeping balance in its strategy-structure relationship.

The Reactor is a fourth type of organization which is characterized by adapting to its environment inconsistently and unstable. This happens because this organization cannot perform with changing environment due to the need of response mechanism system, which leads towards the situation of constant instability of Reactor. Overall, the Reactor is the type of organization which occurs when one of three types of adaptive strategies is inappropriately employed.

Table 2: Solutions to the "problems" of organizational adaptation

	Defender	Analyzer	Prospector
Entrepreneurial problem	1. Narrow and stable domain. 2. Aggressive maintenance of domain (e.g., competitive pricing and excellent customer service). 3. Tendency to ignore developments outside of domain. 4. Cautious and incremental growth primarily through market penetration. 5. Some product development but closely related to current goods or services.	1. Hybrid domain that is both stable and changing. 2. Surveillance mechanisms mostly limited to marketing; some research and development. 3. Steady growth through market penetration and product-market development.	1. Broad and continuously developing domain. 2. Monitors wide range of environmental conditions and events. 3. Creates change in the industry. 4. Growth through product and market development. 5. Growth may occur in spurts.
Engineering problem	1. Cost-efficient technology. 2. Single core technology. 3. Tendency toward vertical integration. 4. Continuous	1. Dual technological core (stable and flexible component). 2. Large and influential applied engineering group. 3. Moderate degree of	1. Flexible, prototypical technologies. 2. Multiple technologies. 3. Low degree of routinization and mechanization; technology

	improvements in technology to maintain efficiency.	technical rationality	embedded in people.
Administrative problem	1. Financial and production experts most powerful members of the dominant coalition; limited environmental scanning. 2. Tenure of dominant coalition is lengthy; promotions from within. 3. Planning is intensive, cost oriented, and completed before action is taken. 4. Tendency toward functional structure with extensive division of labour and high degree of formalization. 5. Centralized control and long-looped vertical information systems. 6. Simple coordination mechanisms and conflict resolved through hierarchical channels. 7. Organizational performance measured against previous years; reward system favours production and finance.	1. Marketing and engineering most influential members of dominant coalition, followed closely by production. 2. Intensive planning between marketing and production concerning stable portion of domain; comprehensive planning among marketing, engineering, and product managers concerning new products and markets. 3. "Loose" matrix structure combining both functional divisions and product groups. 4. Moderately centralized control system with vertical and horizontal feedback loops. 5. Extremely complex and expensive coordination mechanisms; some conflict resolution through product managers, some through normal hierarchical channels. 6. Performance appraisal based on both effectiveness and efficiency measures, most rewards to marketing and engineering.	1. Marketing and research and development experts most powerful members of the dominant coalition. 2. Dominant coalition is large, diverse, and transitory; may include an inner circle. 3. Tenure of dominant coalition not always lengthy; key managers may be hired from outside as well as promoted from within. 4. Planning is comprehensive, problem oriented, and cannot be finalized before action is taken. 5. Tendency toward product structure with low division of labour and low degree of formalization. 6. Decentralized control and short- looped horizontal information systems. 7. Complex coordination mechanisms and conflict resolved through integrators. 8. Organizational performance measured against important competitors; reward system favours marketing and research and development.

Source: Adapted from Miles and Snow, 2003

5.2 AMBIDEXTROUS ORGANIZATION

Hansen and Birkinshaw (2007) consider process of innovation as "the innovation value chain". This framework was designed based on findings they got from five large research projects on innovation. According to them the innovation value chain is a successive process which consists of three phases: idea generation, idea development, and the diffusion of developed concepts; and six critical tasks across all the phases: internal sourcing, cross-unit sourcing, external sourcing, selection, development, and spread of the idea.

The idea of framework is to look at the innovation as integrated flow from idea to commercial output. The strength of a company's innovation value chain is not greater than the weakest link in this chain. This means that focusing more time and resources on an already strong part they often further hamper the weakest link of the chain, which affect the performance of the whole chain. Thus, in order to improve overall innovation process, company should stop focusing on improving their core innovation capabilities and pay more attention on the weakest links.

According to the authors depending on the weak link in the innovation process there are three types of companies each of which they suggest practices for managers to cope with weakness. First is the idea-poor company, which experience shortage of good new ideas. Solution for them is to build external and internal cross-unit networks. Next is the conversion-poor company, which has difficulties to convert good ideas into products and services. Here authors suggest using multichannel funding, which allow to be free from boss's point of view on ideas and his budget; and safe havens as separate divisions within the company focused on developing new ideas. Third is the diffusion-poor company which has problem in monetizing its ideas. "Idea evangelist" as someone who spread good information about new product can be one of the possible answer for this problem.

The good example of the employing principle of innovation value chain is the ambidextrous organization. This organization is distinguished by its ability to simultaneously explore and exploit thus compete both in emerging and mature businesses which enables firm to adapt to environmental changes over time, not just in

short- or long-run. This requires managers to handle totally diverse and incompatible organizational alignments. To manage exploitation a short-time perspective, efficiency, discipline, incremental improvement and continuous innovation are needed. The key success factors of exploration are a longer time perspective, more autonomy, flexibility and risk taking and less formal system and control (O'Reilly and Tushman, 2007).

March (1991) considered the relation between the exploration of new possibilities and the exploitation of old certainties in organizational learning in the adaptive process. A proper balance is essential for organizations in order to develop new ideas and unique competencies at the same time. But as they compete for scarce resources organizations should formulate explicit and implicit choices between exploration and exploitation. This trade-off is complicated by the fact that in comparison to returns of exploitation, returns of exploration are less definite, more distant in time and from the action and adaption place. Exploration in contrast become effective in the short run, have more certain and proximate response. This leads to the situation that organizations improve exploitation more often than exploration which in turn results in lack of long-run intelligence and make adaptive process self-destructive in the long run.

Author presented two outcomes of emphasis on exploitation. The first is decrease of organizational learning in a mutual learning situation because fast adjustment of individuals in organization to its code leads to shortage of organizational learning from them. The second one is inability to gain high competitive position because focus on increased performance turns to reduction in variability.

Levinthal and March (1993) examined complicated problem of balancing between developing new knowledge and exploiting existing competencies, things already known, stressing that there is tendency to emphasize attention and invest resources into one or the other. But this can lead organizations to failure trap. If an organization employs just exploration it will turn to the situation of lacking the results of the knowledge. An organization investing solely in exploitation can face problem of obsolescence. Thus an organization should engage both in sufficient exploitation and exploration to guarantee its present and future viability.

The problem of interaction between exploration and exploitation was also raised by Gupta et al. (2006). They considered such issues concerning this problem as definition of

exploration and exploitation, orthogonality versus continuity of terms, way of achieving balance between them, and necessity of achieving this balance.

In case of exploration and exploitation definition the question is whether terms are different in form of learning or the presence/absence of learning. In this sense the authors agree with March that exploration and exploitation are different in terms of type and amount of learning arguing that all activities involve at least some learning.

The second issue of orthogonality versus continuity of activities in organizational life deals with competing or complementary nature of exploration and exploitation. The answer for this dilemma depends on scarcity of resources necessary to practice both exploration and exploitation and point of view to these terms from single or different domain. In terms of resources the scarcer they are the greater possibility of mutually exclusive existence of them. According to domains exploration and exploitation may coexist in different domain while within a single domain they will present two ends of a continuum which an organization should decide to put attention on.

The question of how balance between exploration and exploitation should be achieved can be solved in two different ways: via ambidexterity or punctuated equilibrium. Ambidexterity is situation of coexistence of exploration and exploitation at the same time in organization but in different subunits or individuals that are specialized on either of them. Punctuated equilibrium represents possibility of chronological rather than organizational performance of both of them meaning that periods of exploration are changed by periods of exploitation. The appropriate mechanism to balance exploration and exploitation depends on the level of organization analysis. Within a single domain using punctuated equilibrium is more suitable as exploration and exploitation constitute two ends of continuum. In multiple heavily connected domains these two activities present orthogonal aspects of organizational behavior and thus can coexist simultaneously.

Finally, balance between exploration and exploitation versus specialization in one of them is an issue organizations are dealing with during adaptive process. The authors argue that even though advantages of performing both exploration and exploitation are crucial there are conditions when specialization on one can be achieved and feasible to long-term survival of organization. This is possible at the level of the broader social system when one organization is a part of it. But organization can specialize on one of

the activity under the certain conditions. First, organizations in the system should possess mutually complementary resources. Second, they should operate in different domain: one is in highly stable while other is in highly dynamic. And third, possibility of mutual co-specialization is low which will ensure sufficient and stable relationship between organizations in system (Gupta et al., 2006).

Innovation can be created in three different ways. *Incremental innovation* presumes relatively minor adaptations making existing product or service better, faster or cheaper. Despite the possible difficulty and high costs of these improvements, they are based on already existing competencies and proceed along a known path. *Discontinuous innovation* occurs in case of major changes usually through a competence-destroying advance in technology and is also called radical innovations. These competencies are usually different from the current firm's competencies and skills. *Architectural innovations* refer to minor improvements through integration of existing technologies which lead to radical increase in performance of current goods. Exploitation occurs in case of employing existing competencies or operational capabilities for producing goods to current customers (O'Reilly and Tushman, 2007). Incremental innovations meeting needs of existing companies can be described as exploitative while radical innovations meeting needs of emergent customers as explorative (Raisch and Birkinshaw, 2008).

But because of the difficulty to explore and exploit at the same time it should be done under the condition when it's most appropriate (Figure 4).

Figure 4: When should ambidexterity be considered?

		Strategic importance	
		High	**Low**
Operational leverage	**Low**	Independent Business Unit	Spin-Off
	High	Ambidextrous Organuzation	Internalize and/or Contracting

Source: O'Reilly and Tushman, 2007

Two major factors are considered in this model: strategic importance of opportunities and possibility of leveraging existing firm assets. In case of unimportance of opportunities and impossibility of utilizing current resources and capabilities companies should spin them out to the public or other companies. When strategic importance of the product is low but there is a possibility to use the firms' assets it can be internalized or contracted out. If a product or service has high strategic importance but low operational leverage the new business can be operated as an independent business unit. And ambidexterity occurs in case of high strategic importance and high possibility for company to benefit from existing assets and operational capabilities (O'Reilly and Tushman, 2007).

But even though decision about suitability of ambidexterity was made there are still tensions about how to organize ambidexterity in organization. The first tension refers to the question of considering *differentiation* and *integration* as alternative or complementary pathways. Differentiation is separation of exploration and exploitation into different departments of organization, integration is possibility to perform those activities at the same unit.

The second tension relates to the placement of ambidexterity at the *individual* or *organizational* level.

The third tension relates to *static* versus *dynamic* perspectives on ambidexterity. Some studies suggest sequential performance of exploitation and exploration activities, which gives a dynamic view on organizational behaviour. Others present solutions of simultaneous pursuit of both processes thus take static view on ambidexterity.

Finally, the fourth tension relates to *internal* versus *external* perspectives on ambidexterity. Companies can perform exploration and exploitation internally or they can acquire new knowledge for exploration externally as well as perform these activities both internally and externally (Raisch et al., 2009).

5.3 ABSORPTIVE CAPACITY

Zahra and George (2002) highlight importance of absorptive capacity (ACAP) as a dynamic capability to create and utilize knowledge which will enable firm to align its resources and adapt to changing environment and thus gain and sustain a competitive advantage. This is due to the fact that there is considerable correlation between ACAP and innovation and other outcomes leading to competitive advantage establishment.

They divided ACAP into two groups of absorptive capacities – potential and realized - depending on the stage of evolution of knowledge in the process of its creation. Potential capacity (PACAP) consists of knowledge acquisition and assimilation capacities, and realized capacity (RACAP) includes knowledge transformation and exploitation. All these four capacities are combinative in nature and build on each other to create a dynamic capability of organization to build the knowledge. This is important to create other organizational capabilities such as production, marketing and distribution. Here can be added exploration and exploitation terms of other authors. Even though the components of ACAP have some similarities each organization deploys it a way, which allow creating different types of competitive advantage.

Acquisition is the organization's capability to recognize and acquire vital external knowledge, which are analyzed, interpreted and understood during the process of *assimilation*. After that new knowledge is combined with the existing one that requires existence of routines to facilitate this process. This can be made by adding or deleting knowledge or understanding them in a different way. Capability to develop these routines is *transformation* outcome. *Exploitation* capability allows firms to apply knowledge by integrating them into its operations.

Components of potential ACAP allow a firm to acquire and assimilate knowledge generated externally but will not secure from knowledge exploitation failure. Realized ACAP to transform and exploit knowledge is not possible without first absorbing it. So in order to make ACAP a dynamic capability leading to organizational change and evolution, these two dimensions should be built on each other. Instead of being supplementary those activities complement each other's role.

Different forms of external knowledge sources influence PACAP considerably. They can be gained through acquisition, purchased by licensing and contractual agreements, and interorganizational agreements, such as alliances and joint ventures. But even though the variety of these sources can lead to increased performance of acquisition and assimilation activities of PACAP it does not necessarily do it in case of low knowledge complementarity with the company. Knowledge from external resources should relate to the knowledge of the company and at the same time differ from a company's knowledge and knowledge of other parts in the network. In this case they can positively relate to a firm's learning.

Past experience plays considerable role in process of acquisition and assimilation of knowledge and determines the locus of knowledge search as companies search for information in previously successful areas. Thus experience increase future acquisition and assimilation capabilities.

ACAP can be one of the sources of company's competitive advantage as it allows a company to generate, manage and exploit knowledge effectively. It allows companies to create innovation, gain strategic flexibility or achieve competitive advantage through product development.

Companies vary in their ability to generate value from knowledge they acquire because of difference in their capabilities to transform and exploit this knowledge (Zahra and George, 2002).

Table 3: Level of absorptive capacity among different types of organizations

	Defender	Analyzer	Prospector
Acquisition	low	medium	High
Assimilation	low	medium	high
Transformation	medium	medium	medium
Exploitation	high	medium	low

Source: Own creation

Analyzers are the middle position between Prospectors and Defenders. They can be placed in the middle of the continuum between the two extremes; exploration and

exploitation. Both of these extremes lack the benefits of the other. Prospectors focusing on pursuit of new ideas and knowledge suffer from not getting full outcomes of exploring of this knowledge. Defenders focusing on exploitation of ideas are not getting new ideas, thus innovation.

These organizations can have two ways of sustaining. They both can stay at their current position and benefit from outsourcing. Prospectors can develop innovation and sell this to other companies or they can outsource their innovative ideas, concepts. Defenders can stay focused on exploiting knowledge they already possess and outsource ideas from specialized companies to develop existing products. These two groups of organizations can make relationships with each other to gain benefit from their core competencies. A second way is to move towards becoming an Analyzer, thus refocus their core competencies (Table 4).

Table 4: Paths of innovation performance improvement

	Defender →	**Analyzer**	**Prospector** ←
Acquisition	Rise capability		Maintain or decrease capability if resources needed for increasing RACAP
Assimilation	Rise capability		Maintain or decrease capability if resources needed for increasing PACAP
Transformation	Maintain or decrease capability if resources needed for increasing PACAP		Rise capability
Exploitation	Maintain or decrease capability if resources needed for increasing PACAP		Rise capability

Source: Own creation

Defenders with their high capability to exploit knowledge in hand in order to succeed in whole process of innovation need to get capabilities in PACAP group: acquisition and assimilation of knowledge. This can be done by making a department in an organization responsible for new knowledge acquisition from the outside world and generating it inside the company and assimilating it with existing knowledge. This process can require extra resources from the company (human, financial, etc) which can be gained additionally, or in case of scarcity of them, taken from the process of knowledge exploration process.

Prospectors have the opposite situation. They need to raise their capability to exploit knowledge, which they successfully generate in order to produce and distribute goods and services more efficient, and thus get more stability. This can also be done by establishing a new department focused on applying knowledge.

6 Customer integration into service innovation

Customers' contribution into the innovation process is one of the best practices and considered as a successful strategy and tactic to develop new product/service success (Brockhoff, 2003; Enkel et al, 2005). Companies willing to advance their overall innovation potential and maximize market safety should start to recognize that customer involvement can be a very important source of product innovation information and integrate their customers into the new product/service development. This will require long and intense relationship between suppliers and customers, which is more stable in the industrial goods industries than in the consumer goods industries (Brockhoff, 2003). Market orientation and open innovation studies supporting the assumption of additional value of customer integration are presented in next two sections. Then a framework, which combines ideas of knowledge exploration, retention, and exploitation capabilities with the concept of open innovation, is described. This is followed by a chapter of customer involvement where such questions as types and level of customer integration, classification of customers according to the stage of innovation process they can be involved, and process of customer selection to participate in this process, are described.

6.1 MARKET ORIENTATION

According to Kahn's (2001) survey analysis from 156 marketing, management and R&D managers shows that market orientation can positively influence product development performance. By market orientation he understands models of market orientation given by Kohli and Jaworski (1990) and Narver and Slater (1990) stressing uniqueness of

Narver and Slater's definition of acknowledging the importance of issues internal to the company namely interfunctional coordination.

Kohli and Jaworski (1990) characterize market orientation as a process of implementing the marketing concept, which consist of intelligence generation, intelligence dissemination, and responsiveness. Their results propose that market orientation require one or more departments involved in process of customers' current and future needs understanding, distribution of this understanding across all organization, and different departments engaged into the activities of responding to those customer needs.

Market intelligence generation is the starting point of a market orientation. By intelligence they mean information on customer's verbalized needs and preferences and factors that influence those needs and preferences. These factors could be government regulations, competitor actions, technologies, changing conditions in customers' industries, and other environmental forces. The problem at this stage of market orientation can be in defining customers. It can be end-users, but also clients who can influence the choices of end-users (e.g. retailers). Thus focus of the company should be directed to the market, which includes end-users and distributors as well as forces that affect their needs and preferences. The generation of market intelligence could be done through formal and informal activities and may entail gathering primary data or consulting secondary sources: meetings and discussions with customers and trade partners, sales reports, analysis of customer databases, customer survey etc. The responsibility for gathering intelligence should be not only on a marketing department but also on those who involved into the different activities with customers. Nevertheless companies should have mechanism of generating information at one place and disseminating it effectively to other departments throughout an organization.

Next step in order to respond effectively to customers needs is participation in this process of all departments of company. So information should be carefully communicated, distributed to significant departments and individuals in the organization. It can be made in terms of periodic newsletters or informal forums. Other form of intelligence dissemination might be "horizontal communication", which presents flow of information within and between departments and provides coordination of people and departments in reaching of overall company goals.

Further after generation and dissemination of market intelligence it should be responded by the company. Responsiveness can include such actions as selection of target markets, designing and offering products/services, producing, distributing and promoting the goods in a best suited to customers way. These activities also involve all departments of organization.

Narver and Slater (1990) define market orientation as a business culture that most effectively and efficiently creates superior value for customers. They state that market orientation have three behavioural components of customer orientation, competitor orientation, and interfunctional coordination. Customer orientation component of market orientation is in more importance according to the goal of the project. By customer orientation authors mean all the activities involved in acquiring information about the buyers in the target market and disseminating it throughout the businesses (Narver and Slater, 1990). This is needed in order to be able to create superior value for the customers continuously. Value can be created by increasing benefits to the buyer in relation to the buyer's costs or by decreasing the buyer's costs in relation to the buyer's benefits.

Ruekert (1992) and Atuaahene-Gima (1995) define market orientation from a customer perspective via obtaining and using customer information, developing a strategic plan based on such information, and implementing the plan to respond to customer needs. Moreover they stress the fact that market orientation influences product development activities by way of developing a product that satisfies customer needs.

6.2 OPEN INNOVATION

Internal R&D is no longer the strategic asset as it was once because of a fundamental shift in the way of new ideas generation and bringing them to market. During the old times of closed innovation companies believed that successful innovation needs control which lead to generation of companies' own ideas, their development, manufacture, marketing, distribution and service by companies themselves. They invested a lot in

internal R&D and hired the best people, which enable them to determine the best ideas, get most of the profits, thus won competition among rivals.

But at the end of 20th century two major factors, remarkable rise in the number and mobility of knowledge workers and increasing accessibility of private venture capital, lead to decrease of success of closed innovations. New model of open innovation appeared which involve commercialization of internal and external ideas by setting up outside and in-house procedures to get to the market. Thus boundaries between company and its surroundings are not anymore strict, which enables easy movement of innovation between them (Chesbrough, 2003).

Table 5: Contrasting principles of closed and open innovation

Closed innovation principles	***Open innovation principles***
The smart people in our field work for us	Not all of the smart people work for us so we must find and tap into the knowledge and expertise of bringing individuals outside our company
To profit from R&D, we must discover, develop and ship it ourselves	External R&D can create significant value; internal R&D is needed to claim some portion of that value
If we discover it ourselves, we will get it to market first	We don't have to originate the research in order to profit from it
If we are the first to commercialize an innovation, we will win	Building a better business model is better than getting to market first
If we create the most and the best ideas in the industry, we will win	If we make the best use of internal and external ideas, we will win
We should control our intellectual property (IP) so that our competitors don't profit from our ideas	We should profit from others' use of our IP, and we should buy others' IP whenever it advances our own business model

Sourse: Chesbrough, 2003

Companies' have recently become more open in the processes of creation new products and progressively more rely on outside innovation. Leimeister et al. (2009) in their research of German software companies' problems in innovation activities suggest integrating customers into innovation process especially into early stages. This process of customer integration is known as open innovation. Customers provide companies with information about their wishes – "need information", and with suggestions about transferring ideas into marketable products – "solution information". Thus because of more actors involved into the process company get more ideas for innovation. Authors also describe three main activities to integrate customers into the innovation process which are the Lead-User Method, Internet Toolkits, and Ideas Competitions with focus on the last.

The open innovation is an approach based on knowledge assets both inside and outside the company in order to generate new ideas and bring them quickly to market. According to Chesbrough's (2003) open innovation is defined as '*systematically relying on a firm's . . . capabilities of internally and externally carrying out the major technology management tasks . . . along the innovation process*' (Lichtenthaler and Lichtenthaler, 2009). Open innovation can relate to the sourcing of technology and knowledge from outside partners – suppliers, customers, competitors, universities and research organizations which called the outside-in open innovation. The process of bringing ideas to market by companies is called the inside-out open innovation. The combination of outside-in and inside-out processes is called the coupled open innovation.

Lichtenthaler and Lichtenthaler (2009) suggest a capability-based framework for open innovation processes which includes capabilities to explore, retain, and exploit internal and external knowledge. Thus company has six knowledge capacities.

Inventive capacity is a firm's ability to generate new knowledge inside the firm which includes such stages of innovation process as internally generation of new knowledge and incorporate it into the firm's base of existing knowledge. Absorptive capacity refers to exploring external knowledge. This comprises obtaining of external knowledge and integration it into the firm's knowledge base. Transformative capacity is a firm's ability to internally retaining knowledge which refers to the processes of maintaining knowledge and consequently reactivating this knowledge. Connective is associated with a firm's ability to keep knowledge in interfirm relationships. Innovative capacity

describes processes of transferring knowledge into new products. Desorptive capacity refers to a firm's capability to identify external knowledge exploitation opportunities and transfer them into the product. Thus this framework considers the dynamic interaction of internal and external knowledge in open innovation processes, a firm's ability to manage different knowledge in open innovation processes and their effects on innovation performance.

Despite all the advantages of open innovation approach it has its difficulties to implement. The role of R&D department needs to be extended far beyond the company's boundaries, which makes coordination of this process more complex. It also can be challenging to get access to outside information or get involve outside partners into the process, some kind of formal procedures should be created for this purpose in companies. Another issue is the laws for IP protection, which is in case of participation of several partners, will be difficult to implement. Also not all industries can apply open innovation approach. Different businesses can be placed on a continuum, from basically closed to entirely open. For example, nuclear industry depends primarily on ides generated within the company due to the fact that little research is conducted at universities (Chesbrough, 2003).

6.3 A CAPABILITY-BASED FRAMEWORK FOR OPEN INNOVATION

Companies employ interorganizational knowledge in order to extend their internal knowledge. But main focus of absorptive capacity concept is on utilizing external knowledge inside the firm without mentioning of integration it into internal firm's knowledge (Cohen and Levinthal, 1990). The integration of internal and external knowledge can enrich managing knowledge in process of open innovation (Zahra and George, 2002).

Lichtenthaler and Lichtenthaler (2009) developed framework which allows examining companies abilities to manage both inside and outside knowledge and complement

companies' absorptive capacity. They consider knowledge management process as consisted from 3 activities: knowledge exploration or creation, knowledge exploitation or application, and knowledge retention. Internal knowledge exploration is a process of acquisition knowledge within the firm (e.g. research). External knowledge exploration refers to creation of knowledge from outside the firm sources. Internal knowledge retention describes the need for knowledge maintenance over time, while external for knowledge in interorganizational relationships. Internal knowledge exploitation is a process of creation internal innovation. External knowledge exploitation describes outward knowledge transfer. Thus six knowledge capacities of managing internal and external knowledge in open innovation process are proposed by authors as a capability-based framework (Table).

Table 6: A capability-based framework for open innovation

	Knowledge exploration	**Knowledge retention**	**Knowledge exploitation**
Internal (Intrafirm)	Inventive capacity	Transformative capacity	Innovative capacity
External (Interfirm)	Absorptive capacity	Connective capacity	Desorptive capacity

Source: Lichtenthaler and Lichtenthaler, 2009

Inventive capacity presents company's ability to generate knowledge within the firm. It also includes process of integration of new knowledge to the company's base of existing knowledge. Even though exploration of new knowledge occurs due to the company's need for that knowledge, it does not arise independently from a firm's current base of knowledge. Thus the level of company's inventive capacity depends on its level of previous knowledge.

Absorptive capacity refers to the process of generating new knowledge from outside the firm. If take to the account model of absorptive capacity of Zahra and George (2002), absorptive capacity in this framework represents potential absorptive capacity. This

means that this process also includes assimilation of external knowledge into the company's knowledge base.

Transformative capacity may be considered as a firm's capability to retain knowledge internally over time. For this purpose knowledge should be maintained, reactivated and synthesized with supplementary knowledge and experience. This capability lets company to easier reactivate new knowledge.

Connective capacity relates to the firm's capability to retain knowledge externally. External networks of information need to be maintained and managed over time. Thus this process requires presence of alliance capability and relational capability which help firm to create links to other sides. These links enable company to get access to external knowledge without acquiring it.

Innovative capacity refers to the process of matching inventions with their target market. Luck of this capability can lead to poor exploitation of large amount of generated knowledge, thus to transforming it into few products or services. Innovative capacity represents the realized absorptive capacity in Zahra and George (2002) model and applies internally both inside and outside generated and retained knowledge.

Desorptive capacity is associated with a firm's capability to exploit knowledge externally. This process includes identification of opportunity to external exploitation and knowledge transformation to the receiver.

Table 7: Knowledge capacities components

Knowledge capacity	Capacity components
Inventive capacity (internal exploration)	• Generate • Integrate
Absorptive capacity (external exploration)	• Acquire • Assimilate
Transformative capacity (internal retention)	• Maintain • Reactivate
Connective capacity (external retention)	• Maintain • Reactivate
Innovative capacity (internal exploitation)	• Transmute • Commercialize
Desorptive capacity (external exploitation)	• Identify • Transfer

Source: Lichtenthaler and Lichtenthaler, 2009

6.4 CUSTOMER INVOLVMENT

Involvement of customers in innovation process results in information acquisition on customer needs, distribution of this information throughout the main functional areas within a company and translation it into promising new product and services (Enkel, 2005).

To decide which customers can bring the most value into the process of new product/service creation next classification of customers can be used (Christensen et al, 2004):

1. Customers not consuming any product or consuming only in inconvenient settings (non consumers);

2. Consuming customers who are underserved;

3. Consuming customers who are overserved;

Every of these group of customers can create unique opportunities for company. To reach nonconsumers companies can develop new-market disruptive goods. Up-market sustaining innovations can be created in order to satisfy underserved customers. Over-served customers can be reached by developing low-end disruptive innovations or modular displacements.

When the characteristics of existing products/services do not suit to the needs and demands of customers they turn to nonconsumers. Market does not offer them goods they desire with their level of financial resources or skills. This segment can be satisfied by introduction a quite simple reasonable new-market disruptive products/services or by helping them do their product more easily and effectively. So they should target new customers or offer a new way of use in order to reach them.

New opportunities can be gained from current customers, who can be high-demanding and less-demanding depending on the complexity of their requirements. Underserved customers consider existing companies goods as not good enough, while overserved as more than good enough. This makes both groups of customers not completely satisfied with the level of product.

To reach undershot customers companies launch the sustaining innovation, which are placed in a continuum between radical and incremental innovations. For this purpose company is in need to expand their growth potential.

Overserved customers appear in case when companies improve their products and services more then these customers need making products too good for them. In this case companies can think about low-end disruption innovation, which are characterized with lower prices but higher asset turnover.

So for the purpose of involving customers into innovation process companies need to identify those groups of customers as they have motivation to participate in this process.

Customer involvement could be two types depending on the locus of initiative (Brockhoff, 2003). When the initiative of collaboration in innovation process comes from customers it may lead to unsolicited cooperation. When suppliers take the initiative into their hands such cooperation is solicited. The results of these types of cooperation can be different because of different motives running customers to be involved into the process.

Unsolicited customer cooperation

Among many ways of getting unsolicited information from the customers Brockhoff (2003) emphasize two of them: complains and suggestions. But despite the importance of these sources not all of them lead to new product development, because not all of them new to the company or integration of them may lead to development of quite complex product.

Customers complain about product characteristics is seen by management as a significant and available source of information for possible product enhancement. Motivation for complains may be an immediate reward or expectation of better fit of improved product. But this information can be just a source for incremental development not for radically new goods because of concern on current product uses and characteristics. Although accumulation and analysis of longitudinal base of complains can lead to more fundamental product modification still this source is considered as rather limited.

Customers may also suggest ideas for product/service development. It takes place when the expected benefit of offering suggestions for customer is higher then the possible cost of developing and transferring the information to the supplier. Possible benefits that force customers to contribute to the product/service development could be:

- compensation of the suggestions value
- price reduction on a number of future new goods
- early access to future new goods
- extra services during use of the new product/services

- private or public mentioning of being the originator of a product idea
- proving creativity to the individual concerned (Brockhoff, 2003).

Some of the rewards can cause the problem of determining the value of suggestion which can be different in front of eyes of customers created the idea and company-receiver. In this case agreement needs to be negotiated by the parts of the deal. Some customers' suggestions can be very costly to process, which requires some procedures of eliminating ineffective suggestions such as replications of earlier suggestions, technically impossible suggestions, and economically infeasible suggestions. Problem about customer initiative appears when customers deciding for them which supplier they can provide with valuable information and suggestions and gain greater value for themselves.

Solicited customer cooperation

Cooperative relationships where suppliers take the initiative can be undirected and directed. Undirected cooperation occurs in case of suppliers' inability to influence which of the customers will response to their offers of partnership such for example as open competitions or contests. In the second case the supplier select which customers to influence and can control the flow of information much better. But customers are not obliged to answer and may be willing to know about other participants in order to determine the expected benefit from participation. This can lead to three situations among involved customers: rivalry, neutrality and synergism. Rivalry may occur in case of involvement of other companies especially with high buying power. Neutral situation will be the case if customers represent different market, while synergism is the result of gaining benefits by everyone who participate in the process.

The next factor of customer contribution into the process of new product/service innovation is degree of involvement. Enkel et al (2005) provided with possible customer profile for participation in concept development and design and testing stages and grouped customers according to their contribution to these activities.

1. Passive professional contribution requires next characteristics from customers:
    - Extrinsic motivation
    - Open-minded towards new technologies
    - Imagination

In this case such groups as requesting customers and launching customers can be integrated into the activity.

2. Active professional contribution in addition to criteria of above need following:
    - Professional competency
    - Amphibological tolerance
    - Research resources
    - Interdisciplinary know-how

This contribution can be expected from launching customers.

3. Technological contribution into the concept development and design requires furthermore technological competency from the customers. These are usually lead users who are involved technologically to this stage of new product development.
4. Prototype testing assume presence of next profile characteristics:
    - Open-minded towards new technologies
    - Attendance to experience
    - Testing capacity

This role can be played by lead users, reference customers and launching customers.

Brockhoff (2003) outlined categories of involvement and expenditure levels (Table 8). Involvement by advice can be performed by lead users and lead to modification of the product or invention of completely new product. Involvement by doing is occurs in case of integrating customer actively into the process of development. It is usually launching customer who shows this degree of involvement which can happen how at the customer's site so as at the supplier's site. In case of strong control cooperation leads to customised products/services.

Table 8: Involvement and cost levels

Categories of involvement	*Explanation*	*Cost level*
No involvement	Users unwilling or not invited to participate	No outlay, but opportunity costs of less than optimal design
Involvement by advice	Advice solicited through interview or questionnaires	Low expenditures
Involvement by weak control	Users have sign-off responsibility at various stages of the development process	Medium expenditure of maintaining own expertise
Involvement by doing	User is design team member or has an official liaison	Relatively high expenditures
Involvement by strong control	Users pay directly developments out of their budgets	Very high expenditures of made-to-order product

Source: Brockhoff, 2003

Contribution of customers to the new product development differs in different phases of innovation process. Here question about whether the customer should be involved in all steps of new product/service development process or in only a limited number of them occurs (Brockhoff, 2003). Cooper (1993) suggests that customer contribution and opinion should be taken into the consideration at each stage of innovation process, although it can be not the same customer involved in every step and the level of customers' contribution may vary. This depends on level of customers' expertise and expected benefits gained from participation.

Enkel et al (2005) provided with classification of customers according to their contribution to the innovation process and the phase of this process they are involved (Table 9).

Requesting customers provide companies with new product/services ideas come from their needs. These needs are often expressed as complains and suggestions, and companies' role here is to capture this knowledge from customers. Complains are mostly concerned with current product and service characteristics, which lead to limited amount of new ideas or incremental innovation, while suggestions can be source of more radical of innovation. At the same time product ideas can be generated by almost all customers, which usually happen in the early stage of innovation process. Also requesting customers along with lead users can be involved into the process of concept development. As these groups of customers gain significantly from meeting their needs they can be the source of the solution by themselves. They can also participate in evaluation of alternative concept while being involved into concept development stage (Brockhoff, 2003; Enkel et al, 2005).

Launching customers involved into the process of product/service innovation from the core concept and design phase participating in development activities up to the start of routine production (Brockhoff, 2003; Enkel et al, 2005).This is quite complex activities which require significant technological expertise from customers and high expenses from suppliers (Brockhoff, 2003).

The reference customers participating in prototype testing provide with application experience and feedback information, which is highly important before product can be launched in the market. They reveal their experience from participation in innovation process not only to supplier but very often also to other customers. Usually companies involve into this stage customers with trustworthy attitude towards supplier ((Brockhoff, 2003; Enkel et al, 2005).

The role of first buyer in innovation process is more passive, but influence it causes on product/service diffusion can support market success.

Lead users are the group of customers that are participating in all stages of new product/service development, degree of involvement in which depends on the gained benefits. They are well qualified and motivated to contribute to the innovation process.

They also used very often by leading companies in developing radical innovation (von Hippel et al., 2000). Moreover lead users provide with higher degree of novelty of innovation, expected turnover, strategic importance and bigger market share then traditional methods of new product/service development. The main advantage of lead users is their capability to face new, strong needs which will be common for others only in future, and companies that are able to find solutions to these needs will benefit extensively (Enkel et al, 2005).

Table 9: Customer Types and their Contribution to the NPD Process

<table>
<tr><th>Phase of the innovation process</th><th>Customers' contribution</th><th colspan="4">Types of customers</th></tr>
<tr><td>Idea generation</td><td>Suggestions, complains</td><td rowspan="2">Requesting customer</td><td rowspan="3"></td><td rowspan="4"></td><td rowspan="6">Lead user</td></tr>
<tr><td>Concept development</td><td>Identification of concepts</td></tr>
<tr><td>Core concept and design</td><td>Participation in development</td><td rowspan="4">Launching customer</td></tr>
<tr><td>Concept evaluation</td><td>Prototype testing</td><td rowspan="3">Reference customer</td></tr>
<tr><td>Pre-announcement</td><td rowspan="2">Feedback information</td><td rowspan="2">First buyer</td></tr>
<tr><td>Market launch</td></tr>
</table>

Source: Adapted from Enkel et al., 2005

In every stage of the process of new product/service development the degree and duration of the customer's wanted involvement can vary from the one expected by the supplier. Also different level of customers' proficiency to support a range of phases of innovation process might limit customer involvement to this exact phase and involve other customers as well. Also customers can decide to cooperate with several competing suppliers. These two issues can be source of conflicts which suppliers should cope with (Table 10) (Brockhoff, 2003).

Table 10: Major conflicts areas under different regimes of customer involvement

		Cooperation of competing suppliers with many customers and	
		one customer	***many customers***
Customers with many suppliers cooperating with	***one supplier***	bilateral conflict of valuation	competition among customers
	many suppliers	allocation of activities to suppliers	allocation, valuation and competitive conflict

Source: Brockhoff, 2003

The stage of customer involvement also depends on the type of the product (Brockhoff, 2003). According to Nelson (1970) products can be classified into search goods, experience goods and credence goods. Although products/services can have all of these characteristics at the same time usually one of them dominates which will indicate the stage of customer involvement. When search characteristics prevail others customer cooperation on new product development could be expected on the earlier stages of the process. Development of experience goods requires customer involvement on the phase of testing the prototype or the product, because of the possibility of these characteristics evaluation appears after extensive use. When credence characteristics dominate in goods customers are involved into the after launch activities, when improvement suggestions can be made by the customers (Brockhoff, 2003).

Customer selection

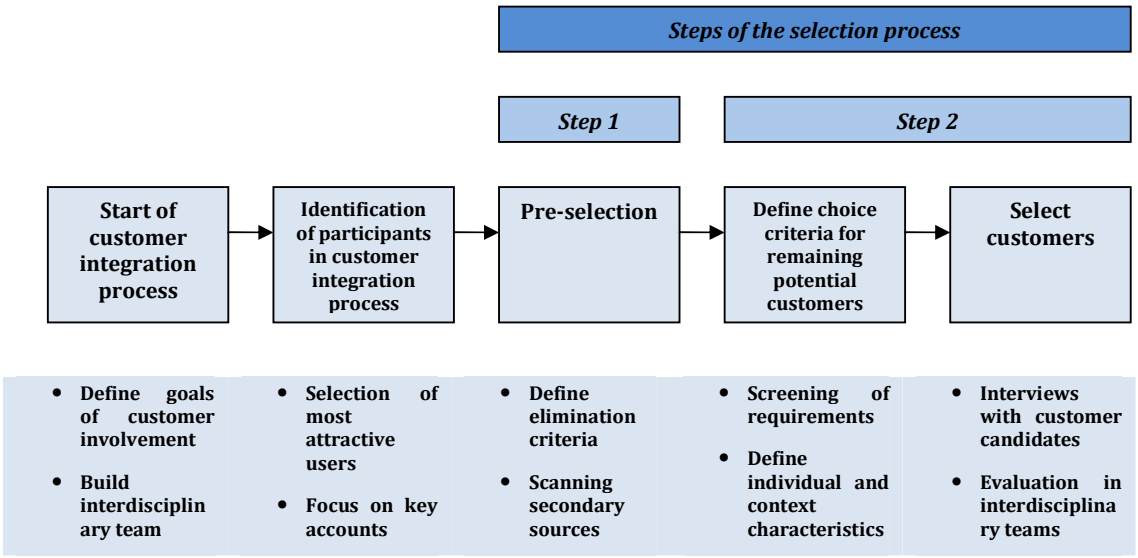
Selection of the partner to be involved in process of new product/service development is complex procedure. The success of this business depends on identification of right customers (Enkel et al, 2005). And also the fact that customers' ability to collaborate differs requires a selective procedure (Henard and Szymanski, 2001).Customer selection process consist of 3 major stages: defining goals of customer involvement, identification of potential participants and selection process itself (Enkel et al, 2005). Selection process in turn includes 2 steps. First is pre-selection during which the number of customers chosen to participate on previous stage is cut using specific criteria. It can be

made by carrying out a cluster analysis based on different customer indicators. For example, Enkel et al (2005) used in their research such dimensions to identify suitable to support the product development process customers as (1) motivation to innovate (e.g. dissatisfaction with existing solutions, high benefits), (2) motivation to cooperate (e.g. cultural and strategic fit, need for the new machine), (3) qualification to innovate (e.g. operational know-how, skilled employees), (4) suitability for cooperation (e.g. confidential co-operation, top-performance). Then they asked key account managers and marketing department to select customers in order to have right candidates for next step.

Brockhoff (2003) suggested that customer selection for participation in innovation process can be done by a multitude of choice criteria. For the first choice criteria he suggested to identify lead users as source of nonconservative needs and ideas. Next criteria could be representativeness of customers for target market, their reputation in those market, and intensity of cooperation between supplier and customer. Also customers' demand potential and creativity could be taken to the account as screening factors. Further technical innovativeness of product ideas is important criterion for choosing innovation partners. Particular customers' competence or expertise to contribute to different phases of new product/service development project is next factor.

At the second step remained participants are judged on the basis of interview and one who suits best to supplier's conditions is determined. Interview consisted of amount of selection criteria necessary to evaluate customers and make final decision, which was based on the results of analysis of the data gained (Enkel et al, 2005).

Figure 5: Process of Customer Involvement



Source: Enkel et al, 2005

Overall authors suggest in order getting the best from customer integration into the process of new product/service development identify the appropriate customer following next recommendations:

- Find the right customer with knowledge and capacities suitable to the exact phase of innovation process;
- Decide the right customer group (requesting customer, launching customer, lead user, reference customer) for this stage of project;
- Recognize and integrate customer needs in an early phase of the innovation process;
- Motivate project teams and managers to integrate customers (Enkel et al, 2005).

7 Organizational change - managerial implications

According to Rummler and Brache (1991) to achieve successful change in organization managers should look differently at their organization and identify and manage "white space". They suggest Process Improvement and Management project in order to improve a process, which consists of next steps:

1. Identify the process that needs to be improved. Managers of business unit must understand what they try to accomplish.
2. Define the objectives for the project on the base of process requirements. Usually it's to get the key process under control.
3. Select the members of the cross-functional team and identify their roles in process design.
4. Create a flowchart or "organizational map" to understand current situation in organization.
5. Identify "disconnections" in the process.
6. Recommend process changes or changes in its execution to support the new process and to move process from what is to what it should be. It could be done by creation of other flowchart.
7. Set up measures for the process and sub-processes.
8. Implement the improvements (Rummler and Brache, 1991; Rummler, 1992).

In order for companies to succeed in process of innovation and take advantages from customer integration into these process, based on the research, the next group of activities is recommended. First is to identify what type of organization according to environmental adaptation company is currently or till which it tends mostly. It can be

done by evaluating its enacted product-market domain, technology, structure, and processes or solutions towards entrepreneurial, engineering, and administrative problems (Table 2). This process can be complicated because of nonconcurrence of companies image about themselves with others opinion or companies' real behavior. Furthermore, type of organization can be categorized only in comparison with other firms within its industry group. It can be more or less diversified, aggressive, or innovative than its competitors (Miles and Snow, 2003).

Next step is to decide if there is need to move towards becoming Analyzer or Ambidextrous organization. Company should evaluate strategic importance and operational leverage of the project (Figure 4). Further type of change company should do in order to move towards Analyzer should be decided (Table 4). At this point decision about how ambidexterity in organization will be achieved should be made as well. Here company should answer on such questions as whether exploitation and exploration activities should be in one organizational unit or separated, at individual or organizational level, take a static or dynamic perspective, arise internally or company can externalize some processes.

Next group of activities is concerned with customer involvement into innovation process. At this point a company should define goals of customer involvement. Then make sure to use both unsolicited and solicited cooperation with customers. For solicited cooperation companies should create group of activities to involve customers in sharing information and ideas, for unsolicited cooperation special group of employees should take care of collection and analysis of complains and suggestions from customers.

Then companies should decide about level of customer involvement into the process of new service development. This depends on companies' needs and resources they are able to provide to carry out this involvement (Table 8). Further number of customer integrated should be defined depending on companies' capability to cope with conflicts it can cause (Table 10).

Then customers should be selected from the base according to criteria important for the particular project of new service development (Table 9). Thus for Defenders interested in enhancing explorative capabilities Requesting customers and Lead users can be

chosen in order to integrate them into the processes of idea generation and concept development. For Prospectors Launching customers, Reference customers, First buyers and Lead users can be useful groups of customers in processes of service development and market launch (Table 11).

Table 11: Service innovation with customer integration

	Defender →	**Analyzer**	**Prospector** ←
Acquisition	Rise capability ***Requesting customers and Lead users involvement***		Maintain or decrease capability if resources needed for increasing RACAP
Assimilation	Rise capability		Maintain or decrease capability if resources needed for increasing PACAP
Transformation	Maintain or decrease capability if resources needed for increasing PACAP		Rise capability
Exploitation	Maintain or decrease capability if resources needed for increasing PACAP		Rise capability ***Launching customers, Reference customers, First buyers, Lead users involvement***

Source: Own creation

For companies to successfully manage knowledge in dynamic perspective process of knowledge exploration and exploitation should be reconfigured and realigned over time. To fit to changing environment firms need not only to develop but also to change their knowledge capacities by, for example, identifying new knowledge and markets. This is possible by constant reconfiguration of knowledge capacities over time, which is turned to be more important than optimization of different knowledge processes in order to increase performance in one period of time.

Also knowledge capacities need to be realigned over time in order to cope with tensions between knowledge exploitation and exploration. Also combination and integration of different knowledge capacities can lead to synergy in performance. Instead of substitution of internal and external knowledge processes companies can complement them with each other in case of low level of one of them. This process will require realignment. Moreover realignment of knowledge exploration and exploitation may provide major benefits (Lichtenthaler and Lichtenthaler, 2009). Due to do this three types of organizational mechanisms can be implemented: structural, contextual, and leadership mechanisms (Raisch and Birkinshaw, 2008). *Structural mechanisms* propose development of knowledge capacities in different organizational units. By contrast, *contextual mechanisms* allow different knowledge capacities to be developed within the same unit. *Leadership mechanisms* give responsibility to reconfigure and realign knowledge capacity to the top management teams (Lichtenthaler and Lichtenthaler, 2009).

8Conclusion

Based on the problem formulation which aimed to identify ways of improving business service innovation by customer involvement the focus of the thesis was on services and business service features that can influence innovation process in this industry, trends in service innovation in B2B market, absorptive capacity as a way companies can improve their innovative performance, and theories and practices of customer integration into the process of new product/service innovation. This all lead to creation of framework of customer involvement into business service innovation and description of how this involvement could be possible done in service organizations by the practice of business process reengineering.

Classification of companies according to Miles and Snow (2003) was taken to provide overview of how different companies adopt to changing environment. They divided all companies into 3 main groups according to their solutions to entrepreneurial, engineering, and administrative problem: Analyzers, Defenders, and Prospectors. Defenders being very high performing in creation of a stable domain through knowledge exploitation lack of capacity to generate new knowledge thus performing poor in innovation activities. Prospectors on the other hand approach their environment more proactively and very successful in knowledge acquisition by identifying and exploiting new opportunities. This lead to great amount of new product/service development, but this development rarely ends as successful market launch which brings constant profit because of lack of exploitative capacity of this group of organization. Analyzers explore new product and market opportunities and at the same time maintain their core skills. Thus Analyzers stand between these two extremes showing existence of exploitative and explorative capabilities which allow them perform well at every stage of innovation process. This kind of organization can be also called ambidextrous organization meaning that they posses both capabilities: knowledge exploration and exploitation.

Absorptive capacity concept of Zahra and George (2002) was taken as base for model of innovation process. They consider ACAP as a dynamic capability that allows knowledge creation and utilization in order to achieve a competitive advantage. One of such

competitive advantage is innovation and there are significant relationships between ACAP and innovative output. They presented dimensions of absorptive capacities of organizations: acquisition, assimilation, transformation and exploitation as capabilities that all together allow companies to successfully perform in innovation process. Those capabilities and classification of companies by Miles and Snow (2003) were used as a base for the model, to show which capabilities Prospectors and Defenders need in order to move in their innovation process towards becoming ambidextrous organization. Thus Prospectors should focus more on realized absorptive capacity constituted with transformation and exploitation of knowledge. Defenders need to improve in potential absorptive capacity which includes acquisition and assimilation of knowledge.

This process of changing their capabilities may require refocusing or acquisition of additional resources. Customers can be involved in the process of improving overall innovation performance at the stages companies have low capabilities. Thus requesting customers and lead users can help Defenders to improve their potential capacity by participation in idea generation and concept development. Launching customers, reference customers, first buyers, and lead users can develop Prospectors realized capacity by being involved in processes of product development and market launch.

During the process of customer involvement some changes in business processes will be required from companies. They should identify overall goal of this involvement, decide about level of involvement depending on existing resources, number of customers integrated and associated with this number risks of conflict between participants, select customers based on important criteria.

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9.3 INTERNET

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