



TAMPERE UNIVERSITY OF TECHNOLOGY

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**IDENTIFICATION OF SERVICE BUSINESS OPPORTUNITIES IN A  
PRODUCT CENTRIC BUSINESS**

Master of Science Thesis

Prof. Miia Martinsuo has been appointed as the examiner at the Council Meeting of the Faculty of Business and Built Environment on 9 December, 2015.

# ABSTRACT

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Value creation in product centric businesses is primarily dependent on having a best in class product catalogue and technology innovations. However, to attain a competitive advantage, market differentiation merely via products is insufficient. Hence, product related services have gained a significant interest among companies lately. Services can create a substantial value in terms of revenue and stronger relationships in the value chain and be beneficial to both the companies and their customers.

The objective of this study was to establish methods for a product based company to identify and utilize potential service business opportunities from a resource based view. A framework was developed to help manufacturing firms understand the kind of service offerings they can potentially develop. This study discussed various potential value creating service offerings. For the empirical analysis, three product based companies were chosen for case study. Interviews with product management personnel were conducted.

The findings of the study include the key resources and capabilities a product-based company must possess and leverage to acquire in order to venture into service innovation. The study concludes on a note that the sales and project management team must work together as an innovations and transformation group for a company to undergo servitization

# PREFACE

This has been the one of longest and most educational experiences of my life. This thesis encapsulates the whole knowledge base I have accumulated over the years of my student life. It has been a tedious but extraordinary learning curve of my life as a student at Tampere University of Technology. After my bachelors in Mechanical engineering, I have always wanted to venture into business management studies and choosing to come to Finland to achieve that has been the best decision I have ever taken.

My immense gratitude and respects to Prof. Miia Martinsuo, who has been extremely patient, polite and helpful towards me throughout this impeccable journey of mine. I am thankful to her prompt responsiveness when I was in doubts about the path of this thesis. I am also grateful to Prof. Olavi Uusitalo who helped me come up with the research proposal for this thesis.

Most of all, I am thankful to my wonderful family back home who have always believed in me and provided me with all the opportunities that I have ever dreamt of. A major share or credit goes to my family of friends in Finland who were a major support system during my whole tenure as a student in Finland

Tampere, March 22, 2017

Aangeerasa Sharma Tirumala

# ABBREVIATIONS

<i>B2B</i>	<i>Business to Business</i>
<i>DCF</i>	<i>Dynamic Capabilities Framework</i>
<i>GDP</i>	<i>Gross Domestic Product</i>
<i>GPS</i>	<i>Global Positioning Systems.</i>
<i>GSM</i>	<i>Global System for Mobile</i>
<i>ICT</i>	<i>Information and Communication Technologies</i>
<i>ITG</i>	<i>Innovations and Transformations Group</i>
<i>OEM</i>	<i>Original Equipment Manufacturers</i>
<i>PCB</i>	<i>Product Centric Business</i>
<i>RBV</i>	<i>Resourced Based View</i>

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# 1 INTRODUCTION

## 1.1. Background and motivation

Nowadays, a product-centric business needs innovations not just in technology and marketing but also in several other services to reach out best to its customers. Service innovation is becoming an important subject for both research and practice (Chae, 2011). In a product-centric business, it can be assumed that the primary source of attaining competitive advantage is through technological innovation, product differentiation, creating an effective marketing mix and competitive pricing methods (Yrjanainen et.al. 2009). But in today's world, these methods are not quite adequate to maintain a competitive edge in the market. This is where the emphasis on services comes into the picture. *In order to significantly increase a technology based company's global presence, in terms of market share, profit, and revenue, the role played by services needs more attention* (Berry, Shankar, Parish, Cadwallader, & Dotzel, 2006). Identifying this situation, many big corporations in the world are adopting procedures to transform themselves into service business companies (Chestbrough & Spohrer, 2006; Sheehan, 2006). Service offering has become a decisive factor for companies to position themselves in the market to enhance their service business sector (Santamaria, Nieto & Miles, 2012). In this study the companies taken into consideration are the ones which are product-centric i.e. manufacturers.

For a product-centric company to obtain a grip over service business which can translate significantly on its revenue there are two possible directions to proceed further. One way is to infuse possible services into the company based on the resources a company has and the other is to create a whole new segment of services. This process is termed as servitization (Vandermerwe & Rada, 1988; Baines et al., 2009; Davies, 2004; Gustafsson et al., 2010; Oliva and Kallenberg, 2003). Neither of the methods is simplistic for a company to adopt in order to innovate something which is worthwhile and profitable. There are several challenges a company would encounter in service innovation and they need to be addressed in the very beginning of the transition process. In this study the main focus is on innovating services for a company based on its existing resources. It is quite possible that at the outset, these services can be perceived to be just an add-on value to the existing products. But as transition progresses, their functionality would grow exponentially and they could prove to be a very viable source of generating profits for a company.

Hence, it can be understood that product or a commodity now includes an additional value in terms of an extended service offering. This combination of a product and a service offering can be termed as an integrated solution (Davies, 2004). The concept of integrated

solutions is currently gaining increasing attention by many product-centric businesses. Despite the availability of abundant literature in the field, further research and study is needed in this area at a practical level from the customers' point of view. For a company to develop a perfect market offering in terms of a bundled solution, it must be well aware of its customers' latent needs for which the company needs to maintain a close strategic alliance with its customers (Lapierre, 2000). Sometimes it is possible that a company is not very well aware its own potential to cater to its customers' despite having the required resources. This study aims at identifying those potential services which can be offered with the existing resources a company possesses. The term service business is often perceived to be just a part and parcel of the after-sales domain where in the functions are mainly related to maintenance issues. (Cohen, Agrawal., 1999) However, that is only partially true. A strategic alliance between the suppliers and customers can open up a wide spectrum of possible services which can be beneficial for both sides in a business network. The service sector in the world economy is growing at such a pace that it constitutes 70% of the GDP of countries like USA, UK and several other developed countries (Kindstrom & Kowalkowski, 2014). This shows and elevates the importance of services in the business world, as it not just adds up monetarily but also helps in creating long standing strategic relationships between a company and its customers in the business to business (B2B) world.

The companies chosen for this study are mainly product centric. The kind of products offered by the different companies taken in to this study are vastly different. Despite the differences in the nature of products and businesses run by the companies, there will be one common aspect between them. Companies that are purely product centric by nature but are looking forward to innovate and enter into the service business sector will be considered for the study.

The inputs required for the empirical research for this project will be accumulated via several interviews conducted with the different companies. Based on the data collected and on its empirical analysis based on the literature review done, a framework would be constructed. The details about the framework and the objectives of the thesis are discussed in detail in the following section.

## 1.2. Research objective and questions

Based on the preliminary research and the background studies, the objective of the thesis is

*....to develop a framework which enables a product-centric company to identify the potential service business opportunities from a resource based view and employ them to attain competitive advantage resulting in value creation...*

For the construction of this framework, an extensive literature the following subjects would be conducted.

- Need for services
- Service dominant logic
- Resource based view (RBV)
- Resources and capabilities
- Dynamic capabilities frameworks

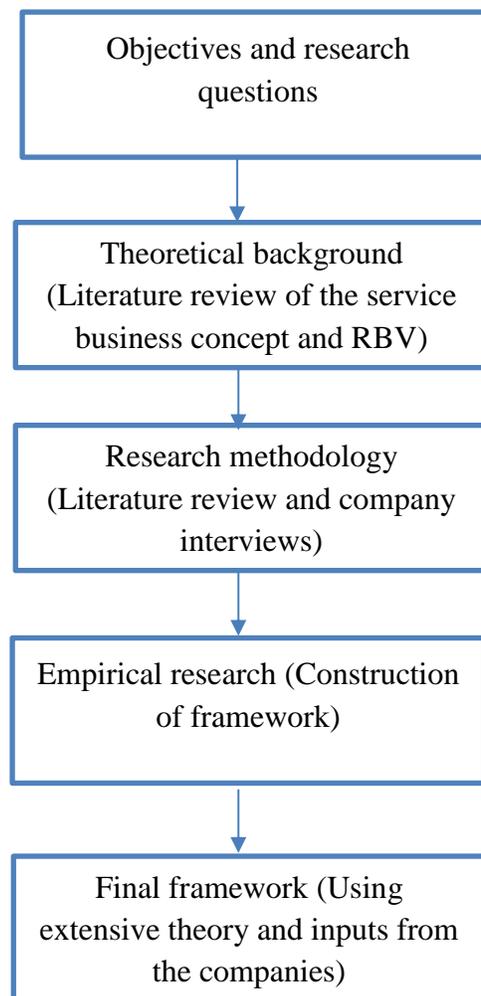
For reaching the above defined objectives the following research questions were stated:

1. Which unique resources must product centric firms possess and develop through hybrid offerings i.e. industrial product-service combinations ?
2. What distinctive capabilities must manufacturers leverage to build?
3. How can manufacturers translate these resources and capabilities?

Certain points like the sort of company's already existing resources and the potential services generated based on them is also considered a vital part of the research. Moreover, importance of the customer value creation through the services should also be investigated intricately. Hence to achieve the objective defined above the distinct resources and capabilities of a firm must be thoroughly studied and analysed. Apart from the existing capabilities, what requires attention are the capabilities a company can build with existing resources which can result in value creation. The vital aspect which can be instrumental in building the final framework would be to deduce how the capabilities and resources of a company can be translated into viable service products. And lastly the main objective of this study is to construct a framework from the above research which can be used as an effective tool by the sales department of the company to identify the potential prospects in the service business management.

### 1.3. Structure of the thesis

The study will have a straightforward road map to the point set in the objectives. Initially a thorough academic literature review in several domains such as service dominant logic and the concept of integrated solutions will be made. A detailed summation of the customer value components and the value creation components from the company and its customer's perspective is necessary. After the theoretical analysis of the concepts commences, the empirical research will be conducted where the preliminary framework defined above will developed.



*Fig 1. Structure of the thesis*

## **2 THEORETICAL BACKGROUND**

For the better understanding of the flow of the study, knowledge of several concepts like the service dominant logic, integrated solutions and the customer value is very vital. Based on these theoretical concepts and assumptions an empirical research will be carried out integrating them with data inputs obtained from companies for which the study is conducted.

### **2.1 Transformation towards service-based business**

Earlier study regarding the transformation from goods-based businesses towards service-based businesses and adopting a service dominant logic has placed heavy emphasis on the concept of value itself (Vargo & Lusch 2004; Mathyssens & Vandembempt, 2007). The most relevant notion has been that whereas in goods-based logic value is implemented, or embedded, in the product, in service-based logic it is a constant co-creation of the provider and the client together. More broadly explained, this means that a goods provider can no longer define the value of their product based on its utilities alone - instead, the client defines the value of a product based on its suitability to their needs, and the service and knowledge provided alongside it also after the purchase. According to Lusch and Vargo...

“A service-centered dominant logic implies that value is defined by and cocreated with the consumer rather than embedded in output.” (2004)

In order to successfully transform from a goods-based business towards a service-based business, it is essential to observe the essence of the service business concept, which is fundamentally built upon how the customer partakes in value creation: the customer's need for service, and different types of service that can be offered to the customer.

#### **2.1.1 Service business concept**

A service business concept defines and markets all the different methods of value co-creation with the customer instead of simply embedding value to the product a company provides (Lay, Schroeter & Biege, 2009). This co-creation is based on a variety of different services and knowledge that can be provided not only as add-ons but integrated to the

offer made to the customer. Such an offer is called a *value proposition*, (Hasan, 2012), which the customer either accepts as a whole or turns down entirely, and which can be later tweaked and reformed in co-operation with the customer:

Service providers in this context do not restrict their offerings to customer service. They offer a comprehensive set of services including services for the installed products, design and construction services, high-value solutions, system integration services, or outsourcing services." (Gebauer & Gustafsson & Witell 2011).

In the light of Gebauer, Gustafsson & Witell's work, continuous customer contact is essential in order to effectively keep up with the customer's needs and maintain a fruitful business companionship. It is indeed the customer who defines what value the proposition has for them, and whose demands must be met in order to bargain. Thus, a product-based company should identify and refine all their expertise and knowledge regarding their products and actively market them as an essential part of the product-service compound.

Typically, however, expertise and knowledge are widely spread in different organisational units within a company, and thus including it all in a value proposal (that is, integrated product-service offering) often requires a certain level of reorganisation and novel ways of distributing a company's resources (Venkataraman & Velamuri, 2004). Keeping product-related activity separate from service and development operations may thus create severe obstacles to the transformation towards service-based business. In addition to this, integrating organisational units at a certain level will also make it more difficult for competitors to copy and refine a successful company's separate solutions in either service or product related matters (Al-Haddad & Kotonur, 2015).

From the customer's point of view, it is also to be noted that they do not necessarily perceive a service as a sum of its components like they do not perceive a physical product so – but rather a complete, singular line of actions (Goldstein, Johnston, and Duffy & Rao 2002). This places heavy pressure on a product-based company to carefully design the service package they are to propose to their customer, so that the customer will perceive the proposed product-service compound as fitting to their needs. This also requires the provider to implement a service-based point of view to the whole hierarchy of the company and throughout the development and marketing processes.

Further, Goldstein et. al. (2002) argue that a service business concept is essentially about *what* services are provided to a customer and *how* they are provided:

“Deconstructing a service into what the and the how or into its components allows designers to identify the various elements of a service concept, check them against customers’ needs, and then design and deliver those elements. However, this ‘bits and pieces’ approach belies the complexity of many services and also ignores the fact that a

service may be seen by its customers (and designers?) as a ‘whole experience’.”

To successfully create an attractive service business concept, it is essential to define the *need for services* for each customer and then define the *types of services* they would benefit from.

### **2.1.2. Need for services**

Of ‘late product centric businesses have undergone a drastic transformation. Generally, there are two types of products associated to a technologically driven product centric company.

- Capital goods
- Consumer goods

This classification is pretty straight forward as the terms indicate. Capital goods are involved in the B2B value chain. A company that manufactures capital goods needs to invest significantly in the development of its required technologies and the R and D associated with it. Moreover, to out-run the competition from other OEMs the company must adopt a cut-throat pricing method which in turn would affect the profit margins of the company. And it must be understood that investing heavily for the purpose of innovating new technologies to maintain a competitive edge can prove to be an impractical strategy after a certain stage. As result of this situation capital goods are sometimes sold at cost price in order for the company to survive the fierce competition in the business network. The logic behind this strategy is to attain a bankable market share by cashing out on high sales volumes (Fishcer, Gebauer and Fliesch, 2012).

Subsequently the company can begin to provide services for their customers related to the products sold. This step can lead to a significant generation of revenue. Hence arises the need for service business development. In fact, the actual profits attained by a product centric company is via the services they have to offer after the sale is done (Jacob and Ulaga, 2008). The next section will list out the different kind of services a company can provide to its customers within the value chain.

### 2.1.3. Types of services

Despite the title, this chapter is not a listing of possible service actions that could be provided to customers, firstly because each customer needs different services, and secondly and more significantly, because services integrated to a physical product are not separate parts but form a chain of processes. Each “type of service” observed here is rather a label for a wide spectrum of similar activities (the similarity being based on how they add value to the product-service compound) than only one service activity.

Edvardsson (1997) relies on an earlier differentiation into four types, or categories, of service processes: core processes, support processes, network processes, and management processes. About what these types have in common, he writes:

“The service process consists of a precise description of various standardised and (alternative) activities in the customer process. These activities do not take place until the customer activates the service process. The activities to be performed are indicated by the service process, i.e. the prerequisites for the customer process.”

What this implies is that a product-based company transforming towards a service-based model should, according to their service concept, design seamlessly functioning services under each type. In core processes, this could mean assembly and maintenance services; in support processes, remote monitoring and helpdesks; in network processes, outsourcing services; and in management processes, mentoring and co-development services, among many others per each type.

Self-evidently, not everything that a company does in each step of the service chain must be entirely transparent to the customer. Edvardsson (1997) emphasizes the significance of a well-designed “line of visibility”, which divides each process into the parts that the customer should perceive, and as importantly, the parts that should remain concealed from them. The company's service concept and the system supporting it may sometimes have to be altered, should they themselves possibly harm the customer's perception of the service provided. Such alterations, however, must always run hand in hand with approximation of their possible consequences.

In designing each type of service, a product-based company should thoroughly find out all the readily existing traits in their organization and its members that could add value to each service type. These traits include, but are not limited to, technical knowledge regarding the product, management expertise, marketing expertise, customer service expertise, networks with suppliers and co-operators, and negotiation skills with the customer. In doing so, the company will be able to harness its existing resources, both operand and operant, to use, and evade possibly significant investments to attain new resources. This practice also ensures that the human resources invested in the service

processes are already familiar with most of the core process, that is, the product itself.

The development of an effective service business concept, identifying the customer's needs for service, and creating solid seamless service processes to go as a part of the value proposition to the customer eventually subtly forces the company to also change their dominant logic from a goods-dominant logic towards a service-dominant logic.

The services offered by product centric company with respect to capital goods are classified into the following categories (Fischer, et.al. 2012).

- **Customer Service:** One of the basic service offerings extended by a capital goods company is customer service. These services help in creating a confidence level for its customers. They generally include functions like logistical precision of the product delivery, customization of the product according to the customer's needs (before purchase) and helping out the customer in getting familiar with the product features and other standardized customer services. Some standard examples for these services include, demonstration of the products functionality, product delivery, billing and invoicing documentation. Although very basic these services aid in establishing a long term robust relationship with the customers (Mathieu, 2001).
- **Product related services:** These services are precisely related to the activities related to the product such as installation, aftersales of spare parts and operational services (after the purchase). In addition, advanced services like ensuring the maintenance and training related to the product installed and the process optimization. The purpose of these services is to ensure that the customer is able to pull out the maximum desired efficiency from the process. These services are provided to the customers at their installation bases in order to cater to their operational needs (Olivia & Kallenberg, 2003).
- **Services supporting business needs:** These are a secondary level services beyond the operational needs of the customers and cater to their business needs. These services cover a vast spectrum ranging from process development to operational services and systems integration. These services are based on the customers need to consolidate products and services into a functional service system. Companies providing these services are involved in the customers' product design and R & D related to it and also the process development. This process of collaboration and co-creation helps the customers to acquire ample knowledge about the capabilities of the manufacturers (Daives, 2004; Wernerfelt, 1984).

## 2.2 Service-dominant logic

Essentially, adopting a service-dominant logic means acquiring a new perspective on value creation (Luoma, 2014). In a goods-dominant logic, the underlying idea is that of value being embedded in the product *per se*, and the presence and functions of the product providing the value to the customer. In a service-dominant logic, however, a longer-term mindset regarding value creation must be nurtured. This mindset should include viewing value as a co-creation between provider and customer throughout the product's operation life. The customer should be viewed as the party who defines the value of the product during its use and the provider as the party who can best improve that value according to the customer's needs. The same applies to sales, after-sales, maintenance and management – shortly, to every part of the service package

“Becoming solutions-focused means that providers have to understand how value is created through the eyes of the customer. The conventional “product-forward” orientation towards value creation is reversed.” (Brady, Davies & Gann, 2005)

In an ideal situation, a product-based company willing to transform towards a more service-based business model is familiar with the customer's method of profiting and can thus foresee their most crucial needs before forming a value proposal to them. In such a case, the product development process becomes inverted: first, the needs of the customer are regarded and then the product and the services to go with it readjusted to suit each customer individually. More often the negotiations have to be carried out with the customer to be able to differentiate what services and how should be provided to them, integrated to the product.

Because in a service-dominant logic the product and the services to go with it are effectively integrated, there is little reason to differentiate much between the product and services. The product is viewed as one part of the core service process instead of a value factor as such. The customer's experience on the product can be improved during its use, and additional services can be provided once need arises. Brady et. al. (2005) emphasize the significance of “co-operation and trust” in defining how value is measured with each customer.

Thus, a service-dominant logic rearranges the positions of different operators in the production chain: suppliers to the provider are viewed as the party that integrates the physical part to a value proposition, the provider complements it with the service part, and the customer develops the product-service compound together with the provider possibly

during the whole life cycle of the product. Since this kind of logic relies heavily on creating long-term provider-client relationships, the services integrated to the offer may eventually form most of the provider's profit margin per solution, and thus the quality and suitability of the services provided must be constantly enhanced

## **2.3 Business growth through service offerings**

In order to design a service business portfolio for a business some aspects must be closely considered.

- What is the nature of the service proposition?
- What is the target segment for the service offering?

There are several typologies or frameworks, which define different kinds of possible service offerings a company can provide. According to Ulaga and Reinartz (2011), for a firm to create a hybrid offering of services, it needs to have some distinctive resources and capabilities. They have identified four such critical resources and five types of distinctive capabilities to comply with the resources.

The critical resources are:

- Installed base product usage and process data
- Product development and manufacturing assets
- Product sales force and distribution network
- Field service organization

And the distinctive capabilities include:

- Service related data processing and interpretation
- Execution risk assessment and mitigation capability
- Design to service capability
- Hybrid offering sales capability
- Hybrid offering deployment capability

Most companies start off offering services related to the product life cycle such as after sales of spare parts and maintenance of the product. Then they gradually try to venture into either the process oriented services which requires know-how about the customer's in house processes or into their asset efficiency which requires knowledge about the customer's capital investments. Most difficult quadrant of providing a service would be in the domain of process delegation which is to perform processes on the behalf of customers. This requires a detailed know-how of the customers' business processes.

		Service Recipient	
		Towards suppliers goods	Towards customer's process
Nature Of Value Proposition	Supplier's promise to perform deed	Product lifecycle services	Process support services
	Supplier's promise to achieve performance	Asset efficiency services	Process delegation services

*Figure 2: Business growth through services (Ulaga & Reinartz, 2011). (TYPOLOGY 1)*

**Product Lifecycle Services:** The suppliers provide these services to the buyers to ensure the smooth running of the latter's process during all stages of the product life cycle. Examples include after sales services of spare parts and providing maintenance support at installed bases. Suppliers must have a proactive attitude and up to the mark logistics and transportation facilities to concur to this kind of needs from the buyers.

**Asset Efficiency Services:** These are the services directed towards improving the productivity of the customers from the resources they have invested in. Examples include customization and monitoring of the products at the installed bases of the buyers. Suppliers must possess distinctive capabilities in risk analysis and mitigation.

**Process Support Services:** These services aid the customers to improve their own business processes. Examples include logistics and material handling issues at warehouses.

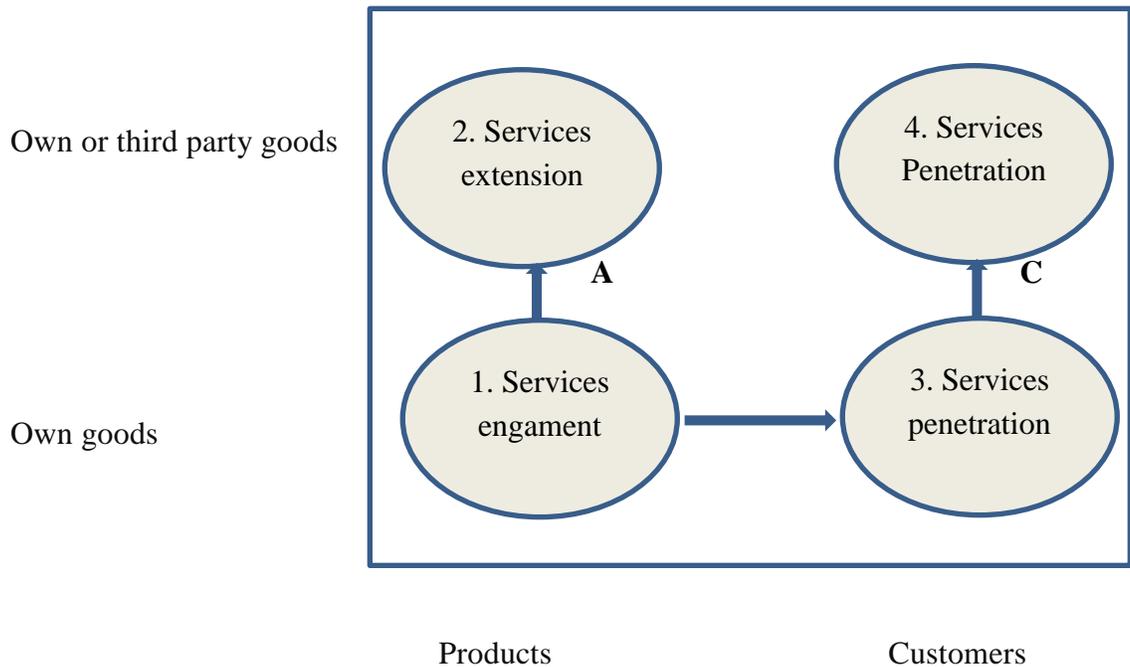
**Process Delegation Services:** These are the services which include performing some processes on behalf of the customers.

Another typology of services defined by Raddats and Easingwood (2010) segregate the strategic choices into two groups.

- Product-Customer orientation
- Manufacturer's own or third party products

They classify the types of services into four groups, which are:

- Service engagement
- Service extension
- Service penetration
- Service transformation



*Fig 3: Business growth through services (Raddats and Easingwood, 2010)*

### (TYPOLOGY 2)

A company typically starts off with product-related services (1) and can move towards services-related to third party products (2) or towards customer related services (3). A company can take a step further providing services for third party products as well as its own products.

Another typology of services proposed by Kowalkowski, Kindstrom and Brehmer (2011) classifies the services in two dimensions. One dimension focuses on the product and process oriented services and the other classifies services either as bundled or unbundled.

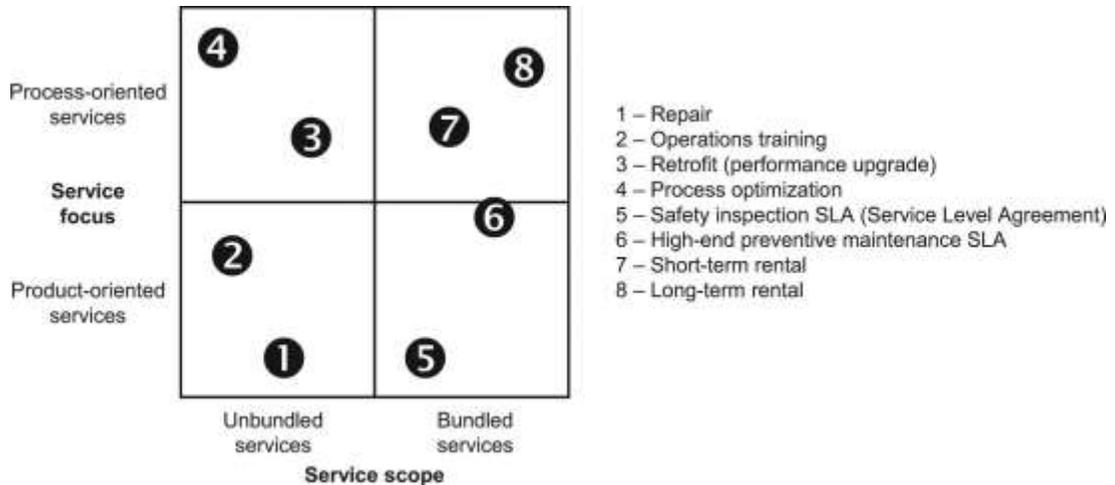


Figure 4: Business growth through services (Kowalskowski, Kindström and Brehmer, 2011)

**(TYPOLOGY 3)**

Identifying the need for services and understanding the concept of service dominant logic comprised the crux of the research when the objective is to design frameworks, which enable to identify potential service business offerings. Studying these frameworks helps in identifying the voids regarding the service business innovation in the case companies that are chosen for empirical analysis. Since the study is also aimed at proposing the potential service offerings that the case companies chosen can offer, discussing different business growth through different typologies of service innovation is also required. At the outset, the idea behind the study was to come up with service business offering based on existing resources of a company. Next, the research proceeds to understand the resources and capabilities of a company that enable service innovation and the resource based view of a company provides the vital information regarding the kind of resources a company must possess and acquire in order to do so.

## 2.4 Resource based view of a company

Over the years, much of the research has emphasized that the resources internal to the firm are the principal drivers of the firm's profitability and strategic advantage. There are several reasons behind this transition in the academic research attention from industrial sector towards the RBV. The changes in the products, technology and customers' preferences have increased at an exponential rate. Hence, observing the cross section of a constantly changing industry is an impractical formulating strategy to gauge the dynamic nature of an industry. Moreover, traditional industry structures where in the boundaries in between were noticeable are no more clear cut today as industries with different technologies as bases tend to overlap. Despite this dynamic nature of businesses, the conventional strategic thinking is based on stable industry parameters such as competitor analysis strategic groups and diversification typologies. Finally, this constant changing nature of businesses has made it mandatory for companies to be proactive and respond quickly to the changes in order to identify the source of competition internally in order to maintain a competitive edge for a mere survival in the industry

The focus on a firm's resource-based view (RBV) has immensely grown in the past decade. RBV of a firm is analogous to the black box of a firm. The basic questions the RBV are, 'what makes firms different' and 'how can a firm attain a competitive advantage using its existing resources'. These questions seem to be done and dusted but that does not diminish the importance of this topic. Many researchers and scholars have attributed their work for the development of this issue. For example, the idea of distinctive competence by Sellznick (1957) and the idea of 'structure follows strategy' by Chandler (1962) and the concept of 'internal appraisal of strengths and weaknesses led to the distinctive competencies (Andrew, 1971) are all worked out from the crux of RBV of a firm (Wernfelt, 1984).

RBV asserts the combination of a company's internal resources and capabilities for innovation purposes. RBV was first discussed in 1959 by an author named Penrose, where in a firm comprised of 'bundle of resources' which can generate benefits to its users that can be quantified. It's the heterogeneity of the resources but not the homogenous nature which gives firm a unique character. To be more exact, the resources are not the definitive inputs to the productivity of a firm but the services they can generate (Kor and Mahoney, 2004). It is observed that the performance difference between same sector firms is higher than the differences found in different sector firms. Addressing this, researchers have discussed the relation between a firm and a market in terms of intensity and the direction which they are influenced with each other. The difference of competitiveness between firms is based on resources of the firms rather than their products. Hence resources are the entities which can explain the performance differences of firms across the industries (Rumelt 1984; 1991).

Resources can be identified as the source of a firm's competitive advantage. Wernerfelt (1984) notably argued that a resource can be anything that can be associated as an advantage or a disadvantage of a firm. Typical examples for such resources could be capital, equipment and machinery, know-how and knowledge of technologies, skilled personnel, brand name and value and also the trade contacts. Considering the strategic management of a firm from RBV, a sustained competitive advantage can be achieved by a firm if it deploys its resources in a value creating strategy in such a way that no other firms are able to replicate it simultaneously. And for a firm to deploy such strategy its resources must possess certain qualities. The desired qualities are that the resources must be valuable, rare, inimitable and non-substitutable (Barney 1991). These indicators of resources are structured into the renowned VRIO framework. This framework was further developed and management academics have identified other specific characteristics of the resources like durability, non-tradability and idiosyncratic nature (Kim, Song, Jason Triche, 2014).

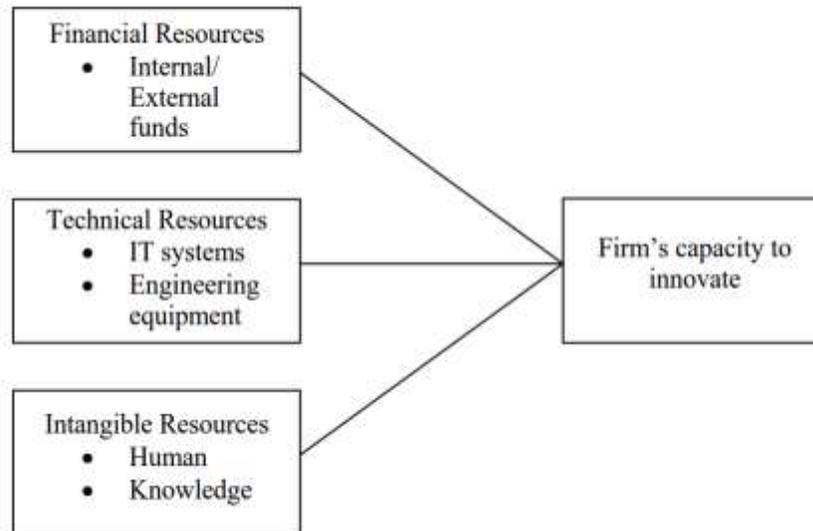
There is an argument that the resource-based approach to identify the potential opportunities has become outdated today provided the complexities of the B2B domain, but that is only partially true. Combining the resource based view and service dominant logic could lead to a very advanced and useful framework which can serve as an effective tool for the sales department in a company. To construct such framework a company must first be able to identify and differentiate between its valuable resources and capabilities. The following section is aimed at identifying and discussing the types of resources and capabilities.

### **2.4.1 Resources and capabilities**

The premise behind RBV is that the firms are heterogeneous in nature in terms of resources they own and control. Resources are the assets which are attached to the firm sometimes on a semi-permanent basis. The general understanding behind this heterogeneous nature of these resources is said to be the resource-market imperfection, (Barney, 1991), immobility (Barney, 1991) and the lack of regulations efforts by the firm towards its accumulated resources (Carroll, 1993). The basic classification of resources puts them into two classes. tangible and intangible. (Wernerfelt, 1984). Resources that are temporarily tied to the firm form the basic unit of analysis for the RBV (Maijoor & Witteloostuijn, 1996; Wernerfelt, 1984).

They include tangible resources such as physical, human, capital, organizational assets and intangible resources like the employees' knowledge, brand value and reputation which

the firms use to design, develop, manufacture and deliver products and services to their customers. (Barney, 1991)



*Fig 5: Resources determining a firm's capacity to innovate (Barney.1991)*

Capabilities on the other hand means the ability of the firms to organize, use and transform these available resources into value creating products or services (Amit & Shoemaker, 1993; Grant, 1996; Prahalad & Hamel, 1990). They are intangible processes developed over time by firms specifically to cater to their needs (Amit & Shoemaker, 1993; Conner & Prahalad, 1996; Itami & Rohel, 1987; Kogut & Zander, 1992; Leodard-Barton, 1992; Winter, 1987). Capabilities can be regarded as the intermediary goods produced by a firm in order to give rise to enhanced productivity of its resources. From these definitions of a resource and capability, it can be inferred that the difference between them is that a capability is firm specific and embedded in the firm's processes where a resource could be a generic asset. In other words, if an organisation was to be completely dissolved its capabilities, which were developed over a period of the firm's needs, are also lost whereas on the other hand the resources could be still present for new organisation taking over (Makadok, 2001).

There is a strong dependency relationship between entrepreneurship and a firm's ability to innovate (Draker, 1985; Lumpkin & Dess, 1985; Cohen, 1995). Researchers indicate that organizational learning has positive effects on innovation. Learning process can be

defined as combining the existing knowledge and skill and adapting them to changing market situations and eventually creating new knowledge. Learning abilities also are found to have a positive connection with innovation (Lynn, 1999; Bartezagghi et al, 1997; Helfat and Raubitschek, 2000; Lane and Lubatkin, 1998).

Sense and response capabilities refer to the firm’s ability to sense the changes in its environment and conceptualize a change in strategy-based on that and reconfigure its resources to execute the strategy. These skills are important for continuous innovation in a firm (Quinn, 2000; Souder and Jensen, 1999). Similarly, a company’s marketing skills are very critical for its ability to implement and exploit innovations (Song et al., 1997; Song & Parry, 1996, 1997; Hultink et al., 2000).

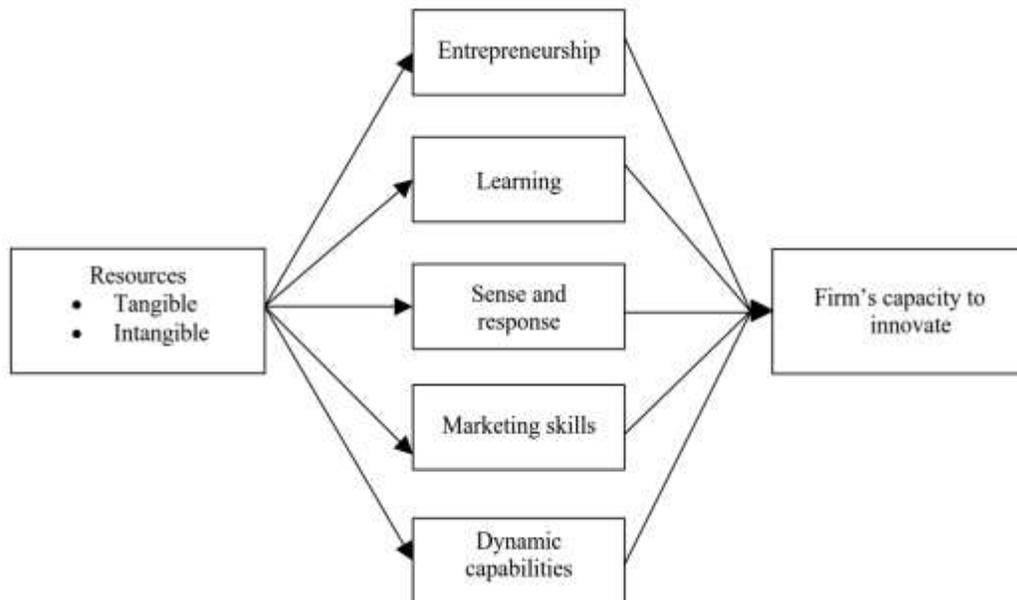


Fig 6: Capabilities determining a firm’s capacity to innovate.

### 2.4.2 Dynamic capability framework

The concept of dynamic capabilities origin from the basis that the RBV of a firm is static in nature and it does not investigate how the resources of the company are developed and deployed into the constantly changing environment (Teece et al. 1997; Eisenhardt and Martin 2000; Winter 2003). Dynamic capabilities are defined as “the firm’s ability to integrate, build, and reconfigure internal and external competencies to address a rapidly changing environment” (Teece et al. 1997). Dynamic capabilities go beyond the base set

of valuable, rare, inimitable, and non-substitutable resources that the RBV uses. The dynamic capability framework (DCF) addresses the firms' ability to constantly adapt and innovate while using the basic tenets of the RBV. Dynamic capabilities enable a firm to adjust its strategy and resources to maintain and sustain a competitive advantage (Wade and Hulland, 2004).

There are three dynamic capabilities that help in bringing a firm's resources and relational capabilities together to innovate (Eisenhardt and Martin, 2000). They are integration, reconfiguration and extraction. Megnuc and Auh (2006) define integration as a firm's capability embedded in the firm's social interactions. Integration capability is the routine by which a firm integrates its resources and capabilities (Zollo and Winter, 2000). The integration within a company does create value, but when the external entities like customers and partners are included, it results in a better levels of service innovation (Zahra and Nielsen, 2002). Dynamic reconfiguration capabilities means the firm's ability to replicate, allocate and patching of the broke resources within the firm (Eisenhardt and Martin, 2000). Sometimes, deducting the abilities of a firm becomes necessary to achieve efficient performances. These abilities fall under the bracket of dynamic extractive capabilities (Zohra, et al. 2006).

In summation, property based and knowledge based resources help a firm to attain a competitive edge in a stoic environment. Dynamic capabilities are the abilities which help them do so in rapidly changing environment by integrating, reconfiguring and extracting resources.

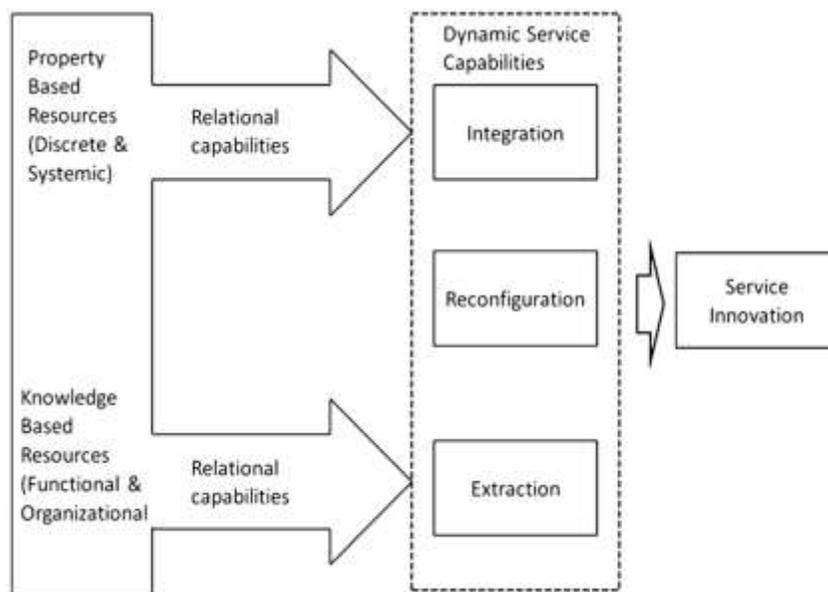


Fig 7: A dynamic capabilities framework for service innovation (Kim, Song Tirche, 2014).

## 2.5 Service innovation through dynamic capabilities

Service innovation is deeply connected to the dynamic capabilities of a firm. Dynamic capabilities are focused on the activities of an organisation which aim to strategically manage and deploy resources through repeatable patterns to achieve business growth (Teece, 2010). There are different kinds of frameworks which consist of sets of capabilities a company should desire in order to capitalise on its resources to come up with new service offerings which they can deliver to its customers.

Kindstrom et.al. identify three types of dynamic capabilities as micro-foundations of an organisation which define their service innovation strategy. They are

- Sensing
- Seizing
- Reconfiguring

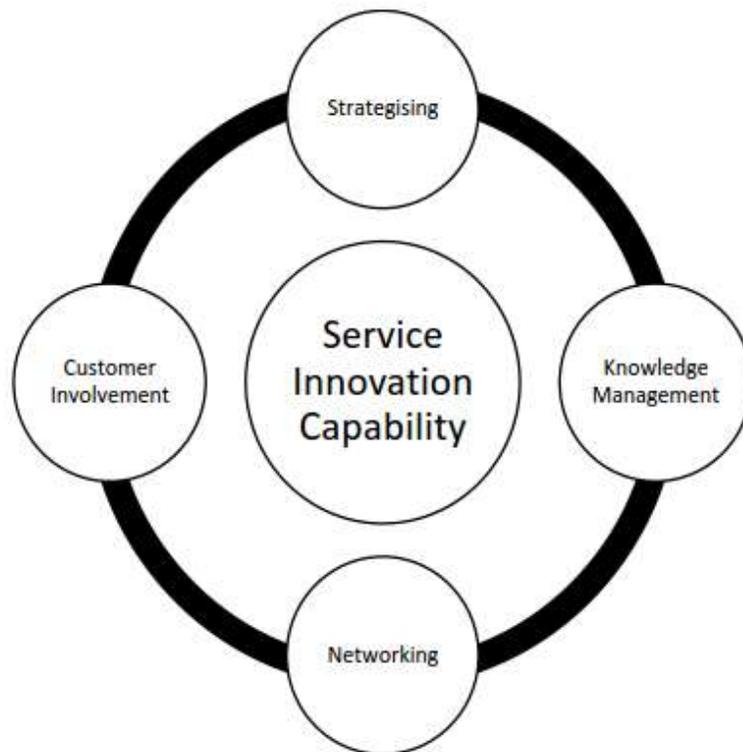
“**Sensing**” mainly refers to the accumulation of market intelligence. Market intelligence in this context refers to the knowledge about customer preferences in the local and global markets. A firm must be vigilant of the market in capturing ideas from the external environment as well as internal through inputs from several of its employees (Day 2007, Teece 2007). This gathering of market intelligence forms the basis of service innovation in a firm since it forms the crux of the idea generation process (Edwardsson, Gustafsson, Kirstensson, Magnusson & Matthing, 2006). Sensing capability basically refers to the idea that a firm needs to be proactive in terms of market orientation (Voola and O’cass (2010).

“**Seizing**” capability refers to the exploitation of the opportunities which appear in the moment. To achieve this capability, it is merely not enough to just invest in technology and related assets. A firm requires a business model which aids in exploiting those opportunities which are “sensed” during the accumulation of market intelligence (Chestburg 2010; Teece 2010). The bottom line is that seizing capability refers to the responsive attitude of a firm towards the identified fruitful opportunities that present themselves over the time (Atuahen-Gima, 1996; Kohli and Jaworski, 1990). A product centric company sometimes can be at a disadvantage in seizing service opportunities due to its complete involvement in product development processes. The identified opportunities may be lost during the transition of management functions. A service oriented strategy is more effective in such scenarios where in the firm’s decision process equally emphasizes the seizing of service innovation opportunities.

“**Reconfiguring**” capability refers to a firm’s ability to make the required adjustments or changes in order to sustain the exploited innovation opportunities in an ever changing

dynamic environment (Helfat et al., 2007). It is natural for a firm to get complacent over time when it focusses more on exploiting than exploring of opportunities (Leonard-Barton, 1992). In such situations some slight refinements in the business strategy can help a firm to sustain the competitive edge obtained through the seized service opportunity. The bottom line is that reconfiguring refers to the “adaptability” aspect of the business strategy of the firm which requires an ability to reconfigure certain elements of the firm’s business model and resources and kill the dead rubbers which may not be relevant to the services anymore (Kindsröm, 2010).

Service innovation capability model can be represented as a ‘multidimensional, hierarchy consisting of collection of dynamic capabilities like strategy making, knowledge management, networking and customer involvement. These capabilities are supposedly embedded in an organizational routine in such a way that they have capacity to repeatedly deploy and reconfigure resources for creation and improvement of new service offerings. A brief discussion on these set of dynamic capabilities gives a clearer picture of this subject.



*Figure 8: Service innovation Capability model (Blommerde & Lynch, 2014).*

### **Strategizing capability:**

Lawson and Samson (2001) have stated strategy to be the firm base of a service innovation capability. Extending that Stewart and Fenn (2006) add that “without strategy, innovation may be blind, directionless or never occur”. On a similar note, Rubalcaba et.al (2012) define strategy to be essential for any sort of innovation. Keeping these very valid points in view a strategy can be described as that tool which considers the creating and managing service innovation activity and fully exploit a firm’s service innovation capability. A strategizing capability defines when, where and how innovation will be used in a firm and involves a set of predetermined goals and motives that innovations are created in pursuit of (Holtzman, 2014).

To enable service innovation, a firm must have a clear cut vision of its competitive positioning and a thorough knowledge about the customer, the kind of services to offer and the method to deliver them to the customers (Siguav et.al 2006). Strategizing capability helps a firm to figure out what projects to be undertaken and how they can be implemented by overcoming the resource constraints and asses the level of risks involved and monitor the level competition in the related domain. This requires improvisations in the firm’s relationships with its customers by judging their demands and contemplating them across the firm’s available resources. If deployed effectively, strategy can be proved to be significantly purposeful towards creation of incremental service innovations.

### **Knowledge Management Capability:**

Knowledge is the information that has been put into use to obtain a desired result from a process. Several academics have credited the concept of knowledge management as ‘idea management’ (Lawson and Samson, 2001). Knowledge management capability can be explained as an organisation’s ability to manage and deploy its intellectual assets in innovation process. Knowledge whether it is related to technological know-how or market intelligence is a vital resource of an organisation. Extending this further Knowledge management is a very broad domain which includes a variety of interdependent knowledge-centred activities in an organisation which aid in making the knowledge usable for innovation purposes. The term includes both managing knowledge both internal in a company and external to its surroundings. The construct of knowledge management includes processes, procedures and structures that endorse efficient use and dissemination of knowledge (Lundvall and Nelsen, 2007: 220). Knowledge management as a dynamic capability has significant repercussions on service innovation and henceforth also productivity. This capability enriches several significant processes of an organisation like decision making, data integration and enhanced collaboration (Meharbarani and Shajari, 2010).

### **Networking Capability:**

Networking is a tool, which helps an organization to utilize the resources of their network and amplify potential opportunities by risk mitigation. In addition to that networking increases accessibility to new and viable knowledge through coordination of learning beyond the organisational boundaries, making use of relations with other organisations, universities and research groups (Lasagni, 2012). Networking with customers opens up windows for the customers to involve and contribute to the development of strong relationship, which lead to innovativeness (Hotzman, 2014)-

### **Customer Involvement:**

Innovation strategy of any organisation is driven by the needs of their customers. These needs can be fulfilled by involving with the customers and matching their needs to the available resources enabling a business to leverage their abilities to cater need the needs through innovation (Sundo, 1997). Service dominant logic indicates that the customers have an important role in shaping a company's innovation capability as ultimately, the value of innovation is assessed by them and they are responsible for its success or failure (Vargo and Lusch, 2004). The knowledge base of a company is also influenced by the customer's contribution of diverse ideas and innovative ways of thinking which can later become the inputs in the innovation development (Chen et al, 2011). Customer involvement also plays a pivotal role on the organization's network as the objective of its structure is to enable learning and involvement from customers (Sjödin and Kristensson, 2012).

Discussion of the RBV and dynamic capabilities framework is necessary for this study in order to identify the resources and capabilities the case companies chosen for this study possess which may enable in service innovation. It also helps in identifying the missing links in a company which limit them from exploiting the value potential services can provide. Obviously, to achieve service innovation in manufacturing firms, they need to have a certain set of unique resources and capabilities and also the capacity to acquire the resources which are lacking. Having discussed the various kinds of resources, capabilities and service typologies, the study now progresses to the research methods adopted to carry out the empirical analysis.

## 3 RESEARCH METHODS

### 3.1 Research design

The objective of the paper is to identify potential service business prospects a product centric firm can offer to its customers. A qualitative, exploratory empirical research is carried out to identify opportunities for new service offerings in manufacturing firms' product centric businesses. A qualitative methodology provides efficient tools for research in management and business administration. (Argyris, Putnam & Smith, 1985) This process requires a basic data gathering activity related to the company from several available sources. The following data gathering steps are taken to carry out the research

*Table 1. Data gathering methods (Gummesson, 1991).*

Sr	Method	Description
1	<b><i>Existing Materials</i></b>	The information that is already available regarding any topic which could be obtained from different sources (e.g. books, articles, mass media reports, brochures).
2	<b><i>Data accumulation</i></b>	Data regarding the companies' profile, current products, operations and services from several open sources like company websites and other open portals.
3	<b><i>Questionnaire Interviews</i></b>	Data obtained from certain sequence of questions asked while conducting an interview or meeting.
4	<b><i>Observation</i></b>	Data achieved by observing the processes related to the topic of case study.
5	<b><i>Action Research</i></b>	Data that is obtained by physical involvement of researcher in different processes, which could also contain other forms of data gathering methods.

### 3.2 Data accumulation and analysis

A thorough research was done in order to select appropriate companies suitable for this study. The data gathering process in this study consisted of two distinct methods. Initially, a thorough internet research was done on the selected case companies regarding their backgrounds, products, businesses and global presence through the publicly available information on the firms' websites and other portals. The second research method adopted is to conduct a systematic interview as structured in the framework. The questionnaire template of the interview can be found in Appendix 1. The interviews were conducted with the employees who were mostly directly involved in service business innovation in their respective companies. A total of five interviews were conducted in three companies. The employees interviewed were in different hierarchical positions in the companies in the perspective of decision making authority.

The case companies had enough of similarities and differences between them. The similarity is that they are all clear cut product based companies and most of their revenue was achieved from the sales of their core products. The differences were such that, the companies belonged to vastly different industries, and are of different sizes and had a different level of market positioning. All the companies have been venturing into service business, but the magnitudes in which they were operating in this particular domain are significantly different. After the interviews were conducted, the inputs attained are used in discussing and establishing the results.

*Table 2. Summary of companies included in the empirical study*

	Weld Oy	Conc Oy	Forest Oy
Nature of business	Welding machine manufacturer	Provider of construction materials	Manufacturer of forest and agriculture related machinery
Sales revenue (MEUR)	110	370	462
Nr of personnel	600	80,000	800
Current involvement with services	Provide welding management software solutions	Delivery services associated to the products	General after sales and maintenance services
Nr of interviews	2	1	2
Information based on company websites and personnel interviews			

The companies chosen for this study are based in Finland and operating worldwide. They are of different sizes in terms of number of employees, annual turnovers, market positioning and the state in which the companies have invested their resources in service

innovations. For the purpose of confidentiality, proxy names are used to represent the companies in this study. The first company is a leading welding machine manufacturing company based in Lahti region of Finland. This company will be referred as Weld Oy in this study. The second company is the leading manufacturer of construction materials such as concrete and composites. This company will be referred to as Conc Oy. The third company is a forest machinery manufacturer based in central Finland and operating worldwide. They manufacture heavy machinery such as harvesters, forwarders and cranes predominantly used in the forestry industry. This company shall be referred as Forest Oy.

In all three companies, have their own core competencies in terms of technologies and products. Major proportion of the companies' revenue is generated from their main product sales. The level in which the companies have been involved in offering extended services varied because of the nature of the products and company structures. To carry the empirical analysis, the data accumulated regarding the company resources was transposed against the set of resources and capabilities discussed in the literature review to identify the missing loopholes and missing linkages in the case companies which are essential for service innovation. A cross case analysis between the companies is also carried out to identify the similarities and differences among the case companies regarding the sort of resources and capabilities they have.

## **4 CONSTRUCTION OF THE FRAMEWORK**

### **4.1 Necessary inputs for the framework**

The objective was to develop a tool for the product management team that can be used to identify the necessary fruitful combinations of resources and dynamic capabilities that would result in service innovation in a firm. Based on the findings made in the literature review, the general perspective was to identify the vital resources and dynamic capabilities within a firm, which may help in service innovation. And in addition to that, how to monitor and regulate these resources so that they do not end up getting wasted despite having service innovation potential, and identifying the resources and capabilities a company can possibly leverage to extend beyond its capacity.

To achieve the objectives, the structure of the framework needs to be simple and straightforward. The applicability of the framework must be such that it is compatible with product centric companies of different sizes and products varying vastly in technological intricacies and service offerings extending to a wide span. Since the service innovation process is directed towards the customers of the companies, the framework must also have certain information regarding the customers as a derivative. The customer value component forms an important derivable of the framework. The main hurdle in creating a standardized generic framework is the heterogeneous nature of the product-based businesses. Every product-based company differs from another on several aspects such as technology, company size and product applicability, product design and engineering and so on. For example, the products of a welding machine company are very complex and intricately engineered than that of a concrete making company. In order to create a framework which windows all these kind of companies, there is a need to jot down the basic similarities in any kind of product based business. Despite the differences in companies regarding their products and processes, there bound to be some fundamental similarities in a way that they operate. This framework must encompass all those parameters that certainly define a few standards of any company's core strategy when it comes to service innovation.

There are situations when companies are unaware of the valuable assets they own, which can result in service business creation. These assets can be information, resources and capabilities or tacit knowledge or other know-hows. Tacit knowledge especially is difficult to be documented. This lack of awareness about an enterprise' own capability is not deliberate but happens due to the fact that certain information or processes are just a part of the routine that their value sometimes goes unnoticed. The information can be vast

varying between sales figures personal information acquired through existing business networks.

The interview framework for company interviews includes eight different themes as shown in the figure. The framework was modified constantly as the interviews progressed based on the inputs obtained from the company personnel. This initial framework is a preliminary model for acquiring the data for the empirical research. The aim later on is to simply the framework with certain standard issues faced by different sorts of companies.

## **4.2 Deliverables of the framework**

This framework contains the basic draft of questionnaire which help a company in understanding their current status quo regarding its services as a business component. This framework will help in conducting the empirical research in the form of questionnaire interviews with the selected case companies. As mentioned before the aim of the study is to provide a tool which when used along with a company's other pre existing data like its financial and sales reports

Table 3: Preliminary framework for customer information and resource evaluation

Background Information of the interviewee	Background information of the company	Contemporary situation of the company	Resources and Capabilities the company considers valuable	Company's customer information	Relationship with the customers	Outlook and future scope of the company
<p>Employee work experience and history with the company</p> <p>Current position at the company</p>	<p>What is the core competence of the company?</p> <p>What are the main ways you create value?</p> <p>What do relationship with other companies mean to you?</p> <p>Do you outsource any of the services? yourself?</p> <p>What are the steps in sales process and how are you involved in it?</p> <p>How are you better than your competitors?</p>	<p>What are the recent changes you have witnessed in the company's environment? (internal and external)</p> <p>Any current goals the company has in the present</p>	<p>What do you think are your valuable and inimitable resources?</p> <p>How do you monitor and regulate those resources?</p> <p>Is there any demand for new service offerings from customers?</p> <p>How vigilant and willing is the company to reconfigure its resources and capabilities?</p> <p>How much is the company willing to leverage its resources and capabilities?</p>	<p>Who are your customers and what do they do?</p> <p>Many small customers vs few key customers?</p> <p>What do the customers expect from you?</p> <p>Changes in the customer's environment and effects of those changes on you?</p> <p>What are the most common reasons for complaints from your customers?</p> <p>Any successful and unsuccessful cases?</p>	<p>What do the customers value in your offering?</p> <p>How can the communication with the customers be improved?</p>	<p>What is the direction the company is currently headed in?</p> <p>Foreseeable changes in your and your customer's environment?</p> <p>How will the customer value of your company change in the near future?</p>

## **5 RESULTS**

The main source for the empirical analysis of this study is from the company interviews conducted during the data accumulation phase. The results in this section are expressed in a triadic form since there are three case companies. The empirical data is presented with respect to each company separately. In further sections these results are compared and analyzed to arrive at a consensus. Since the nature of companies and their business models are different in this case, sometimes the results are not in coherence as expected due to lack of certain variables, which are highlighted at that point itself.

### **5.1 Company background and understanding the current state of affairs**

Although a minor introduction to the case companies was discussed before, this section has an important pretext pertaining to the empirical study. In order to analyze the current situation regarding business innovation in a company, it is vital that we know about the types of products and services it currently produces.

#### **5.1.1 Case company Weld Oy**

Weld Oy is the second largest welding machine manufacturer in Finland and one of the global leaders in developing welding solutions. The company has over 600 employees, production facilities in Finland and India and sales offices worldwide. Like many other businesses in Finland Weld Oy began its journey as a family owned business. They have an enormous experience of 65 years in developing state of the art welding technologies. And today they have revenue of 100 million (euros).

Weld Oy is a typical example of a product centric business with their core products being welding machines. However, the company's core principle of innovation has lead it to be the first mover in the use of digital welding technology. And the latest sensation in the company is its venturing in the software business and coming up with a welding management software, which is the first of its kind in the world. This company has customers in vast areas of business such as the shipyard and offshore industry, construction industry, pipe and pipeline manufacturers, automotive and transportation industry and other machine manufacturers.

Understanding the business model of Weld Oy was not a complex affair after conducting a basic Internet research. Their core competence is in the knowledge of technology and products, which are the main source of their revenue. However, after conducting a couple of client interviews, it was understood that, the company is gradually venturing out into service businesses within its limitations. More on that is discussed in the following sub-chapter.

### **5.1.2 Case company Conc Oy**

Conc Oy is the leading manufacturer of stone base construction materials operating in Europe. This company is the largest and oldest player in infrastructure industry of the entire NordicS and virtually heading a monopoly in the region. Like many businesses in Finland, Conc Oy also started as a family run company from Ireland, which still comprises most of its top management. Their business is mainly spread out in the Nordics (predominantly Finland, Sweden and Norway) and Russia.

The origins of this company date back to 1897 and the position they enjoy today resulted through several mergers and acquisitions of other companies with the last acquisition dating to 2013. The company was the first to introduce readymade concrete mix to the construction industry in the 1950s. They later ventured in to recycling and crushed aggregates in the 60s when they began operating in Russia and the Baltics. As mentioned before this company although began its journey as family owned business, in the process the mergers and acquisitions resulted in the having a more than one parent companies. It was only in the 90s when all the different companies comprising Conc Oy amalgamated into a single firm, which ventured out into different domains of construction business.

As of now Conc Oy is a major provider of vast number of construction materials like, gravel and landscape products, concrete, cement, pipelines, bricks and other facade elements.

### **5.1.3. Case company Forest Oy**

Established in 1970, Forest Oy is currently one of the world's leading manufacturer of forestry related machinery. Given the cover of its vast geographical area, forestry has been one of the most significantly thriving industry in Finland. Right until recently Finland was the world's largest exporter of wood pulp for the paper industry. Compared to the history of forestry in Finland, Forest Oy is relatively a young company in the field. However,

despite that they have been successful in establishing a brand in the country and across the world. Barring Finland, Forest Oy has a major presence in the South America.

This company specialises in the production, sales and the maintenance of forest machines and their related information systems. The machines are renowned for using a cut-to-length method, which means that the trunks are cut to lengths in the forest to suit their intended use. And the information systems provide the data to the end users about the type and quantity of timber. (Wirelessly and in real time).

Forest Oy is known for its relentless efforts in developing its products and updating itself with the know-how technologies in the forest machine industry. Unlike the previous two case companies, this company's products are quite big in size and relatively a lot complicated technology and engineering wise. And the similar to the formerly discussed case companies. Forest Oy also embarked upon its journey in a small town in the Central Finland as a family owned business. Currently their products include harvesters, forwarders, dual harwarders, harvester heads, cranes and information systems. The company is a typical product centric business with a clear vision with respect to its technology. Most of their services currently are related to aftersales services (spare parts) and maintenance.

## **5.2 Evaluating the resources and capabilities**

Since the research is conducted from a resource-based view, it is important to identify and articulate about the resources and capabilities within the company to come up with worthwhile solutions in the direction of creating service business potential

### **5.2.1 Case Weld Oy**

Weld Oy has been a pioneer in developing state of the art welding technologies right from the outset. Upon interviewing the product manager, it was to be found that the most valuable resource in Weld Oy's perspective was mostly them being technically very sound. To list out a few salient resources and capabilities:

- State of the art welding technology
- Welding solutions

It can be observed that terms like 'solutions' are easy to throw around and have a certain ambiguity when seen from a broader perspective. So upon further questioning the product manager about the company's resources, he said,

*If the question were directed towards me personally, I would say my expertise in several fields such a years of experience in designing ERP solutions. And above that, my knowledge of the welding technology and the industry overall. I consider that as a rare combination. And if the question is directed towards the company overall, we have teams of people like with diverse backgrounds and expertise on top of the state of the art technology we have (Technology and intellectual resources)*

Hence it is fair to deduce that the crucial and valuable resources in this company's case are its technology innovation and the skilled human capital, which is able to enable, sustain and amplify these capabilities.

Along with identifying the valuable resources and capabilities, a company must also be in a position to be able to regulate resources or reconfigure capabilities. When asked how agile Weld Oy's environment with respect to this is, the response was...

*If we see a requirement of a particular resource or a capability we lack, we are more than willing to invest in acquiring that. However, the process is not as simple and straightforward. It takes time in the transition and reconfiguration of resources. If there is a demand from the customer regarding a certain aspect on which we do not have hands on expertise, we try to help them out in a way we can. For example, we are willing to open up the cloud services to our customers to sort out their requirement.*

### **5.2.2 Case Conc Oy**

Conc Oy is a company with a fairly basic business structure. As discussed before the product of is company is construction material. The product itself is not very technology oriented but the processes involved in producing them requires heavy machinery and a large work force on the ground. And company being a family run business its structure is simplistic in nature comprising a board members predominantly from the family itself who make most the decisions regarding the company's vision and strategy. However, the aspect that requires attention in this case is the company's humongous size and the nature of its competence in the markets where they are actively involved. It is not very difficult gauge the valuable resources of firms which are virtually heading a monopoly in the industry they operate in. The conversation with a product manager of Conc Oy was distinctly different from the other two subjects dealt in this research. When asked about the resources and capabilities of Conc Oy, the company personnel responded by saying that...

*We have a very uncomplicated product with a complicated business model. If you consider our most viable product which is gravel, you can infer that neither the nature of product*

*nor the process which is required to produce it requires rocket science and both the technology and reserves to run a business like this are available to everyone. However, what we consider valuable are our ample financial assets. We are the biggest boy in town. We own most of the construction businesses in the Nordics and Baltics and are constantly eager to spread the wings further.*

With a straightforward response like that it is not very tricky to deduce that having high standalone financial assets can be good enough to maintain a competitive edge of a business running in a less technically driven industry. And inspecting further, the enormous human capital of eighty thousand employees working world wide can also be counted as a resource extremely valuable.

And in contrast to Weld Oy, the environment regarding the regulation and reconfiguration of resources in this company was found to be rigid. The project manager's response was...

*Given the size of our company and the nature of our relationships with the customer base, we do not have much room for flexibility when it comes to leveraging any further capabilities. The entire strategic planning of the company is handled by the top management and the guys on the middle level have very little to ponder upon when the job is assigned to us with a predefined set of rules and regulations.*

### **5.2.3 Case Forest Oy**

The products of Forest Oy are heavy machinery used in the forestry and agriculture. The technology with which this company is involved is in may not be as intricate or precise as welding machines but still does require complex engineering abilities. Forest Oy is known to be one of the best makers or forwarders and harvesters in the world, does enjoy a significant position in the market and commands a brand value. Finding what forms crux of the valuable resources or capabilities in this case required a mundane effort as the technology involved complex mechanical engineering. When enquired, the service development head responded...

*We are a fairly new player in industry we operate in considering a few of our competitors who are at least a hundred years older than us. Having said that, we have been very successful in establishing a revered brand name for ourselves and a major chunk of credit for that goes to our intense engineering skillset and marketing abilities. I would also say our geographical location has also played quite a role in our success story as two-thirds of Finland is covered up with dense forests which is an open playground for us to play in.*

From that response, it can be understood that the valuable resources in case of this company are its technology know-how and engineering skillset. But what strikes the most

is that sometimes there is a certain inherent value added to a business merely because of the market they operate in. This of course requires critical thinking right from the outset with respect to the vision and idea of the company itself. To start a business pertaining to forestry in a country that is covered in a forest has an inherent masterstroke in its strategy. And owing to its success, Forest Oy currently has more customers overseas than in Finland where it was initially found and still has its headquarters located in.

### **5.3 Approach towards service as a business component**

Service business component in any product centric company is a major tool, which helps in value creating besides the actual product itself. When trying to find understand the different kinds of services provided by the companies, the first thing to notice are the list of services provided by the company on their websites and brochures. However, such lists of service offerings on websites can be very generic and often vague. In order to understand the service offering of a company it is crucial to investigate the value creation techniques adopted by any business. In this section, the questions put forward to the interviewees were regarding how they created ‘value’ to their customers. The responses in most cases were very crucial in widening the perspective from a basic academic point of view.

#### **5.3.1 Case Weld Oy**

Welding technology in general is complex, as it requires adequate skills right from the job floor level. When the products of a company are complex in nature there is an abundant scope for after sales services. However it is reckoned that after sales services are just a part of the service business entity. According to the project manager, Weld Oy’s software business is the key component of their services, which enables them to differentiate from others and position themselves uniquely in the industry. They are currently the first movers in developing the so-called ‘welding solutions’ and aim to be a ‘value partner’ in the supply networks of the markets they operate in. When asked to elaborate about the value creation process, the response was...

*Terms like value creation and value partners can sometimes get redundant and are easy to throw around during a sales process. Added value is tricky thing to explain sometimes. Especially when it is not easily quantifiable. However, in case of Weld Oy, we are training our sales people to emphasize on our models of welding solutions and welding documentation. For example, once the sale is closed, if the customer follows the*

*guidelines and procedures described in the documentation provided, we can assure that there will be a significant reduction in the wastage of resources. That is sometimes difficult to quantify and can only be realised gradually over the time.*

They work in tandem with the programme management and information and communication technologies (ICT) department when the sales process is in place. While the company is on constant look out for providing services in the form of comprehensive solutions, there are certain services, which they themselves outsource from a third party. Chores like security audit and tax audits are to name a few such services, which Weld Oy outsources to third parties.

Interviewing further about demands from the customers' side for any kind of specific services, the manager responded that ...

*Most of the times, we identify the requirement for a new solution as the customers are pretty much occupied in their own operations. However, if there is demand for some exotic services from customers, we are more than willing to provide them. But of course if it is solution, which requires us to reconfigure our resources or any other additional investment, we adopt the appropriate pricing strategy to justify our offer.*

The further discussion on this subject is carried out in one of the subsequent sections of the empirical results of this study.

### **5.3.2 Case Conc Oy**

The approach towards service business as a component in Conc Oy was significantly different from what was discussed in the previous case company. As established before the product of Conc Oy is technically simplistic and the technology in this industry is an open source available to pretty much anyone. So when asked how they created value for their customers, the manager responded by saying...

*The services we provide are simple. The most important thing expected of us is the delivery of the construction material at the sites on time. We do that very efficiently with a fleet of trucks owned by the company.*

Given the nature of construction business it can be comprehended why delivery on time is regarded as an effective service in this scenario. Investigating further, the manager also added that, because of the huge number of customers ranging from independent builders to giant construction companies, they also outsource the material supply operations to sub-contractors very often. Except for the timely delivery of materials, there are not many demands from any of their customers. He further opined that the scope for the product

related services in this case is very narrow because of the sheer simplistic nature of the product. The only scope for service innovation here would be complementary services related to the material handling.

### **5.3.3 Case Forest Oy**

When the products of a company are heavy machinery involving complex engineering, there is an obvious need for the maintenance and repair services, which are more or less the part of generic after sales services. However, the nature of the after sales services in this case is not as basic as discussed in the previous cases. When asked to elaborate more on this, the response was...

*We have a quality of world-class foresters and harvesters on our catalogue but when you're dealing with heavy machinery, there are certain wear and tear issues faced every now and then. First range of services from our side include the training the customers with the machinery to extract the optimum efficiency from the without hampering the life much. In spite of providing clear-cut manuals and instructions right at the outset, these are the services, which are mandatory and expected of us. We do keep track of our installed machinery all the time to keep up with the needs of the maintenance of the machinery and probable spare parts supply.*

When it comes to any demands from the customer's side with respect to specific services, it was found that there were insights and discussions regarding the product development more than the services itself. Details of which were not divulged due to confidentiality but examples were given like incorporating global positioning system (GPS) devices on the machines and so on.

## **5.4 Relationship with the customers**

In order to understand the nature of relationship the case companies have with their customers, finding out information regarding the customers is vital. Details like the nature of their business, size of their companies, customer expectations, customer complaints and the change of environment in their businesses. Although such information usually is kept confidential, the interviewees were happy to share essential aspects of it in the bounds they were allowed to.

### 5.4.1 Case Weld Oy

Weld Oy has a wide range of customers in industries ranging from metals, manufacturing to energy (coal and gas), pipes, pressure equipment and shipbuilding. They have one major key customer, which contributes to a significant amount of their annual revenue, and besides that, there are several other smaller companies to whom they provide the basic welding machines. For the purpose of this study, the relationship between the case company and its key customer is taken into consideration.

Weld Oy provides a major chunk of its welding solutions to its key customer. When asked about what was the one main expectation of this customer from Weld Oy, the response was...

*A key customer of us who is located offshore has our sophisticated welding management system and well trained welders. What they expect from us for the system to be compatible with their production, tighter documentation. We have a single dedicated sales person behind one project right from the outset and a dedicated solution engineer once the sale is made and the system is in place. There is constant exchange of information between the teams between the companies to ensure the smooth running of the welding solution incorporated to the customer.*

Software business is requires constant monitoring and updates. Hence, it can be inferred that Weld Oy has long term relationships with its customers. The most common complaints (although rare) they have from the customers are about the solution compatibility issues. This usually happens due to the miscommunications with the customers, where in sometimes the customer is unclear of their needs or lack of understanding of the problem statement on Weld Oy's side itself. Effective feedback loops between the two bodies becomes essential to minimize the errors in scenarios like this.

### 5.4.2 Case Conc Oy

The relationships this case company has with its customers was observed to be very one-dimensional. When asked about this the project manager at Conc oy was not shy to call themselves a giant bully in the industry. In his own words...

*We have a wide range of customers starting from individual domestic buyers to government funded nuclear plants. There has never been concern regarding the competitors or the fear of losing out customers as the sheer magnitude of business we own in the markets we operate in.*

Discussing further, it was agreed that for a company of this stature with numerous customers ranging from construction giants to government funded nuclear reactors to individual buyers, they are facing issues regarding prioritizing the needs of their customers. In addition, having numerous customers has resulted in lack of distinguishing of key customers who could be substantial value partners. The interviewee who works closely with the operations management team of Conc Oy expressed concern over this lack of prioritizing customer relationships that in the long run could have strenuous results on their sales. Having said that they do acknowledge that the company still tries to maintain long-term steady ties with all of its customers in a way they can.

### **5.4.3 Case Forest Oy**

Heavy machinery products as we know have different set of issues to be dealt with than the former cases discussed. When questioned about the nature of customer relationship they enjoy the personnel stated that...

*We have a steady line of customers all over the world and the nature of relationship with each one we experience is more or less homogenous in nature. There is not much of assistance required with the customer processes so the customer dependency on us on that regard is relatively low. However, the standard set of services like machine maintenance and spare part replacement, we have an effective sales teams each designated to the different geographic locations we operate in.*

When there is a low dependency levels from the customers, the expectations from their side tend to be fairly transactional. Hence the service offerings they provide currently include only those related to the maintenance related issues and referral for spare parts. As long as the products purchased are fully functional withstanding the wear and tear, there are not many complaints or demands from the customers. The interview opined that the short-lived nature of transactions with the customers post the sale of machines poses a great challenge to come up with ideas regarding service innovation.

## **5.5 Outlook and future scope in service innovation**

All the aspects of the empirical analysis until now have dealt with the contemporary situation in the case companies regarding their resources, services, customers and their expectations. In this section, the point of focus is the outlook into the future of the company and what they intend to do to capitalize on with respect to the service business

component. In other words, what are the realistic goals these case companies have set for themselves in order to maintain a competitive edge in the service business sector.

### **5.5.1 Case Weld Oy**

Currently Weld Oy in overall is in a stable position with respect to their product sales. Although they have invested a significant amount of their resources in integrated solutions, their core competence remains to be their core products, which are their welding machines. The welding programme management team, which handles the software business, is still in the growth stage if their statistics were to be plotted on a product life cycle graph. The field they are operating has a huge potential for business growth, which they are yet to explore to fuller extent. Despite being in the growth stage they are expected to sail smoothly even in case of any turbulences in the environment of the welding industry.

From the business point of view, there are not any major changes expected in the near future. However, there is a necessity and room for change with respect to the environmental sustainability and standardization of the processes. The service offerings in the welding industry overall are in a nascent stage when compared to other product centric businesses. Standardization of welding procedures worldwide is in order in the near future.

The customer value of the company is foreseen to improve in a positive direction with the main stream welding machine sales being on a higher note. Meanwhile, they are working constantly for the optimization of their management solutions to serve their customers effectively. Although Weld Oy has a major chunk of business dealings with one key customer, they are constantly on the watch for more potential customers.

### **5.5.2 Case Conc Oy**

Being the market leader, Conc oy does not foresee major changes happening in the business environment. Most of the companies in this industry are family owned businesses. Hence, if even the change of generation happens in the governing body of a company it happens with in. Conc Oy visualises its future business to be extremely stable owing to the expansion of major cities in the Nordics and rampant construction of new buildings, roadways and tramways.

Being the biggest player in the market Conc Oy unusually experiences a healthy competition with in the market from growing companies. Conc Oy has acquired three major competitors in the market in the last decade owing to its undisputed positioning in the market. As of now, they do not see any mergers happening in the near future.

This company unlike the other two cases has a very rigid hierarchy in its structure. All the strategic decisions are taken by the board, which predominantly comprises of the family who owns the firm. Moreover, they are said to be very strict with any sort of financial expenditure. The business seems to be expanding in growing cities in the Nordics and Baltics.

Having said that, they do aim to focus on customer relations and strengthen their ties with in order to avoid getting complacent in their position. As mentioned at the outset, Conc Oy is the market leader and their focus for the near future is to maintain the position they currently enjoy.

### **5.5.3 Case Forest Oy**

As discussed earlier Forest Oy has a steady line of loyal customers in Finland and overseas and the firm enjoys an approved brand value. Despite complex engineering involved products, the nature of the business is uncomplicated. The company has been on an exponential rise with respect to its sales in the markets where they are currently operating in (Finland and South America). However, the future of the company's run would be dealing with some major changes happening in the industry.

Forest Oy has been a very successful forest machinery manufacturer in Finland owing to the rich green cover of the country. Finland has been one of the major player in the paper industry, which is now dwindling. This is certainly going to have the repercussions in the forest machinery industry. Adding further, the awareness on climate change is expected to have influence on deforestation activities in future which in turn have direct implications on the forestry industry.

As expected, this case company has been investing resources heavily in expanding their markets and are considering entering the highly competitive south Asian markets. Owing to their high quality and revered brand value, they are confident to sustain and maintain a competitive edge in the market. An interesting observation to be made here regarding the marketing and sales approach Forest Oy adopts in order to penetrate the highly competitive and culturally different markets.

## 5.6 Cross-case analysis

Although all three companies chosen for this study have product centric businesses, the nature of their products and the way they strategize is considerably different. In order to design a generic framework which can be deemed fit to be operational on different companies, a compare and contrast analysis across companies is required. In the empirical results certain key findings regarding the companies' crucial resources, capabilities and nature of customer relationships was discussed. Upon observing the financial statements of the companies, the notable similarity across all the companies can be said to be their financial resources. And the notable difference across them is the level at which each company is ventured into service innovation. Weld Oy has vested in services in terms of providing solutions to a considerably deeper level when compared to the rest of the two case companies. Despite the complex nature of their technology and services, the relationship between Weld Oy and its customers is more collaborative and deep rooted in comparison to the latter two. The following table discusses the similarities and differences among the key findings across the three case companies.-

*Table 4: Analysing the key variables across the case companies*

Key variables	Weld Oy	Conc Oy	Forest Oy
1. Products	Smaller machinery which technically complicated in nature	Simpler products which require tedious production process	Heavy machinery involving complex engineering skills
2. Financial resources	Adequate	High	Adequate
3. Size	Medium	Large	Medium
4. Approach towards service business component	Highly invested in services like welding management systems	Intermediary level services like product delivery	Basic level of services
5. Customer relationships	Long term and collaborative. Continuous involvement with the customers to keep with their needs and fine tuning their abilities	Short-lived and transactional. Large number of customers with varied level of needs	Strong and loyal customer base with long term but transactional relationships.
6. Future outlook	Heavily vested interests in improving current services and developing new services	Monopolistic in nature and complacent to their market position. Very bleak interests towards services	Although currently involved moderately with basic services, future vision is to expand their service offering

Despite the differences and similarities, the basic business logic behind all product-based company remains the same. As observed in the empirical results, the fundamental source of income in any company remains dependent on the products itself. The study now progresses to answer the research questions set at the outset to achieve the objective defined.

## **6 DISCUSSION AND CONCLUSION**

The prime objective of this thesis set in the first chapter of the study was to come up with a framework, which would help a product centric business to identify the potential service business opportunities from a resource-based view, and employ them to enable attain a competitive advantage resulting in value creation. In this section, the idea set out is to answer the research questions based on the empirical results and pitting them across the theoretical background that encapsulates around the results.

### **6.1 Answers to the research questions**

#### **6.1.1 Product-centric firms' resources for product-service combinations**

While discussing the resource based view in chapter 2, it was observed that resources form the crux of the basis for any firm to create and sustain a competitive advantage. Different kinds of resources quoted by several authors were listed out and discussed in brief. In this research question concerning goods-centric firms' distinctive resources for industrial product-service combinations, the point is to continue the discussion in detail about what resources the case companies chosen for this study already have and what set of them must be desired or leveraged in order to march further in the direction of service innovation.

Most commonly acknowledged resources considered vital for service innovation are the financial, technological and other intangible resources like human can knowledge based resources. (Maijoor & Witteloostuijn, 1996; Wernerfelt, 1984; Barney, 1990) Taking that into account in the case of Weld Oy, it was found that the primary resources considered valuable there is the technological know-what of welding industry. They have an inept depth of knowledge about welding technology and are the first movers in developing a welding management software which has been the foundation of their journey into service innovation. However, during the empirical analysis it was observed that what they lack is a concrete operational model in handling their service solutions. Weld Oy has been mostly successful in engaging their key customer into employing their management software, but there are other customers who just buy their basic welding machines. When a company aspires to venture into service innovation, a proper operative model for identifying and designing of possible service offerings, which can result in value creation is necessary. In the typology 3 of services discussed in chapter 2, under the product related services were a class defined namely safety inspection. A weld wherever put in place is an extremely crucial part of the entire structure. Especially when a company has customers in high pressure equipment making companies and ship building, safety inspection of the welds

performed can be a valuable service for both sides. Incorporating new operating models into the company procedures cannot happen overnight and requires a certain cultural change in a firm.

In the case of Conc Oy, the admission in the empirical analysis was that the crux of firm resources are their financial assets. When a company is the market leader in their respective industry, sometimes there is an oversight of many possible opportunities, which may aid in consolidating their position. A recent example of such case is with the devices section of Nokia. Mobile giant Nokia was a pioneer in developing the global system for mobile (GSM) technology, which made them the market leader of mobile phones over a decade. But due to the complacent nature of a generic market leader Nokia could not identify and catch up with the smart phone technology innovation. The example is here although explores the lagging behind in technological innovations, it is an accurate analogy even when it comes to service innovation. During the company interview at Conc Oy, it was understood that the company has a strong forte in terms of logistics and warehouse management. This particular resource for a company can aid in a significant value creation should they venture into process support services to their customers discussed in Typology 1. This oversight of a company's own resource would not happen had they a team that looks into the systematic frameworks for service business innovations.

And similarly Forest Oy at the moment enjoys a great brand value owing to its state of the art products in foresters and harvesters. In the empirical analysis, it was identified that a level of saturation is expected in the industry of forestry in the primary markets the firm operates in. Forest Oy is currently more inclined towards market expansion strategies than venturing into service innovations. In this case, there is a set of resources that the company can leverage to build, which is having a diversity in the human capital. In this particular case, company the talk about leveraging resources is not directed towards value creation via services. Forest Oy currently provides the basic product life cycle services which were discussed in Typology 1 which include monitoring the wear and tear at the installed product bases, attaining feedback from the customers and providing them with maintenance services and spare parts. Upon observing such situations through a systematic framework developed in this study it can be instantly identified that there is scope for asset efficiency and process delegation services which if ventured into can result in a significant value creation. In typology 2 service penetration discussed about creating in an initiative on such grounds.

To summarize, a few of the vital resources which a firm would need in addition to the ones discussed in the theoretical and empirical analysis are diversity in the human capital, teams dedicated in understanding know-how, know-what and know why pertaining to concrete operating business models of service innovation

### **6.1.2 Goods-centric firms leveraging unique capabilities**

To answer the question of manufacturing firms' unique capabilities, what must be the first and foremost point is to understand the differences between a resource and a capability. To put it in simple words, a resource is what we have and a capability is what we can do with what we have. For a firm to venture into service innovation or sustain it, they need to possess certain dynamic capabilities that were discussed in detail in the theoretical background of this study over dynamic capability frameworks. To recap a few, seizing, sensing and reconfiguring are three such capabilities that may aid in service development mentioned in one of the DCF. (Quinn, 2000; Souder and Jensen, 1999)

At Weld Oy, as we know the program management team responsible for software business is credited for being the first mover in the developing a state of the art welding management systems. For a system like this to sustain and to be kept updated, a strong knowledge management capability becomes vital. One of the capabilities a firm in this position can leverage to build. The dynamic capacities listed out in this particular framework go hand in hand with each other as a strong set. In order to keep up with the compatibility issues with the software management systems, Weld Oy must be vigilant leveraging a customer involvement capability. However, when aspects like this are handled with an outside entity from the firm strong documentation regarding the information security and integrity must be emphasized upon.

On the other hand, the set of capabilities that a market leader like Con Oy must leverage to build can be on a different level. Having abundant financial assets, acquiring resources of any desired magnitude can make a firm complacent to its actual needs. Leading a monopolistic approach and buying out potential competitors to maintain a market position may come across as a feasible strategy. But it is not a sustainable one on the long run. To understand that a firm must be able to sense the needs of the existing customers and changing markets. A recent example that encapsulates a situation like this is the trade relationships between Russia and Finland. For decades now, Russia has been a loyal customer of several Finnish products. However, in the recent times of economic recession the devaluation of the Russian currency made it difficult for them to afford the Finnish products. This has created a chaos in the economy of Finland overall and was a major cause behind the mass layoffs of employees from Finnish companies like Valio. This situation could have been avoided if the companies in Finland were more vigilant and had dynamic sensing, seizing, and networking capabilities to create secondary and tertiary markets for their products. The analogy here may be made between bigger entities like economies which have a great deal of complications like trade deals and treaties involved but the logic behind that applies to any companies that have fixed set of lined customers over a long period of time.

Companies like Forest Oy with a steady customer base must have strong networking capabilities when attempting to put market expansion strategies in place. This has a little to do with service innovation but since the question was about leveraging dynamic capabilities, it is worth mentioning the importance of networking in this case. The dynamic capabilities as term may seem generic in business language but have a pertinent value when thought from a prescribed perspective. And when it comes to service innovation, to provide process delegation services which were mentioned in the answer to the previous research question, a firm requires certain reconfiguration in its structure and culture.

### **6.1.3 Translating resources and capabilities to competitive advantage**

Now that the importance of possessing the required resources and dynamic capabilities was established, investigation must be carried about how these resources and capabilities actually can be translated to value creation via service innovation. When a company is moving from a product centric business to more of service oriented one, the transition does not happen overnight, several aspects change, and its speed. The after sales services like repair and maintenance issues are typically seen as the supplementary services for the product business being value adding and aiding in product sales. This situation is understandable since the core business logic behind such company is product based and goods and services are often seen as separate entities instead of product-service union as described in the service dominant logic in the theory.

There needs to be a change in the way a product-based companies handle the customer relations. In PCBs, the employee relationships with the customers are transaction based and short-term arguably so since the nature of business is short lived. However, in service business is requires more than transactional conversations between companies for it actually to result in value creation on both sides. The nature of these relationships can only be changed by a cultural shift in the environment of the company. The sales people must be trained to emphasize the importance of customer perceived value of a product or service they are handling. In this study, the purpose is to create a tool for a company to identify and exploit the business opportunities via service innovation with the existing resources. For this, a company needs make certain changes in defining the responsibility of sales and project management teams. The sales and management team must work together as an innovations and transformations group. (ITG) The ITG must be involved in the company's strategy making policy regarding the service business development. The reason behind this is the simple fact that the sales and project management teams are the ones which are predominantly responsible for any company's relationships with their customers.

During the company interview at Weld Oy, it is observed that one of the most common reasons for the customer complaints is the compatibility issues of the welding software's into the customer interface. The root cause for the compatibility issues in any situation is the lack of proper communication channel between the two teams on both sides. In addition, in one of the responses from the company interviews, there was an interesting case discussed related to the communication channels within the company. While making a sales pitch during a project initiation, the sales team included a service in the product catalogue, which was still in the development phases. The move made was based on the project roadmaps and forecasts given to the team. Nevertheless, when the time of delivery arrived the promised catalogue of services were still in the beta phase and were not ready to be installed real time. Situations like this create an unnecessary trust deficit with the customers. Ideally if the sales management and product management team were working together instead tandem, with the level of understanding and transparency regarding the projects, miscommunications can be mitigated which eventually results in value creation

## 6.2 Impact on the company culture and structure

All the observations related to this study were made from a resource based view of a company. Right at the beginning a set of research questions were proposed to achieve the desired framework. The key findings included a set of resources that a firm should own and capabilities a firm should leverage to build in order to venture in to service business innovation.

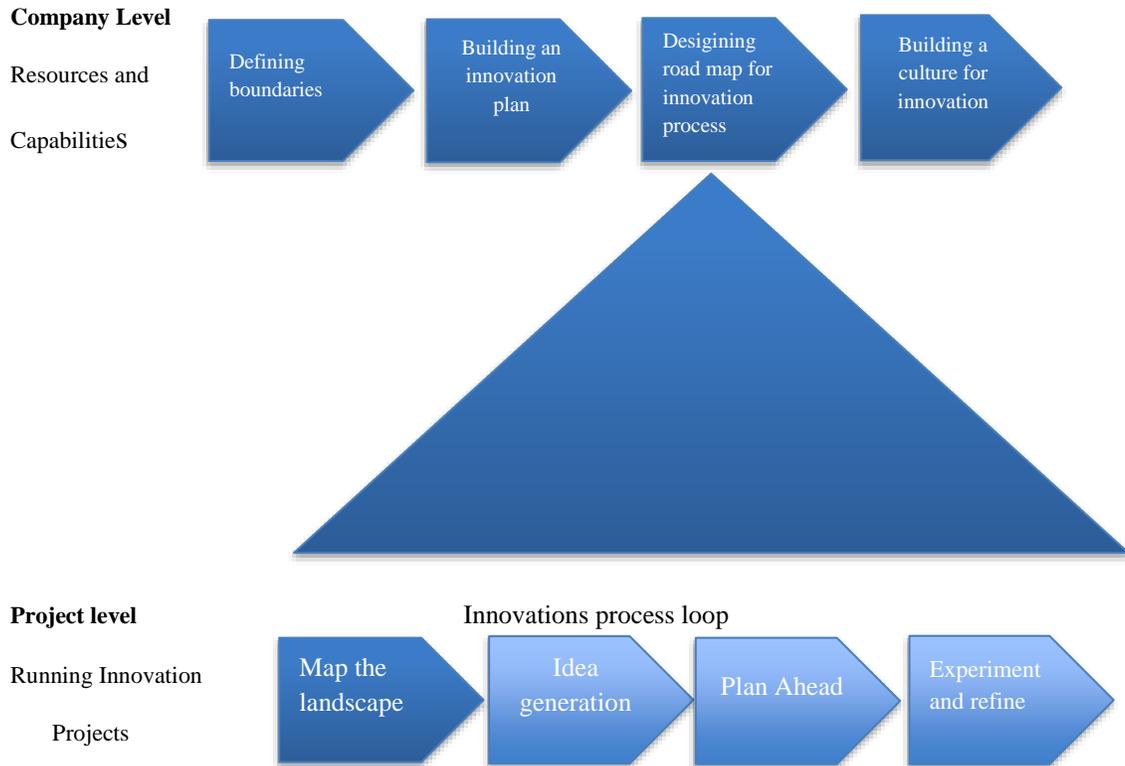
Possession of financial resources, technological resources, diversity in human resources, and knowledge is the prerequisite for any firm aspiring to exploit the service business domain (Barney, 1991). In addition to that the company must be vigilant in order to seize and sense opportunities and must be in a position to leverage and reconfigure its resources as the situations demand (Day, 2007; Teece, 2007). The most important derivation of this study is that, even though most of the desired resources and capabilities discussed as findings of the study are already in the reach of a company, a substantial cultural shift is essential inside the company (Mallinger, Goodwin & O'Hara, 2009). The most common problems identified in the case companies during the empirical research were

- Rigid conventional product oriented transactions
- Lack of proper communication channels between the teams inside the company
- Lack of willingness to embrace the change in atmosphere
- Lack of operational models which include service component in the product catalogue
- Lack of visibility factor when it comes to value creation via service

Product centric companies for a while have adopted a set of business practices which in turn have defined an architecture of the company. And the structures are more often so rigid that they become complacent with technology development and oblivious to potential business opportunities. For a product based company to undergo servitization a shift in business culture and business structure is necessary. (Ahamed, Inohara & Kamoshida, 2013)

Having dedicated product development teams and sales development teams working in tandem is getting conventional in the era of globalisation. Innovations in service business can only happen when the teams work as one right from the stage of idea generation. The conclusion of this study is to propose an innovations and transformations group (ITG) as a business model which will be responsible for maintaining effective communication channels between the customers and the management of the company. Sales teams with their financial data and product management teams with their updates on technology innovation must be a part of ITG. (Bouwman & Felt, 2008)

There must be periodic brainstorming sessions in the ITG for the sake of idea generation to development of best in class models to incorporate the service business component as an inherent part of the product service amalgam. A gradual overhaul of the company structure must happen in order to enable innovations that result in value creation.



*Fig 9: Operational model of Innovations and Transformations Group (ITG)*

### 6.3 Final framework

The construction of this desired framework started right at the outset of this study while defining the derivable of the study. The preliminary framework designed in chapter 4 has constantly been altered modified and fine-tuned based depending on the findings in the empirical results. In the final framework, the most applicable and informative components of the original framework were taken and further developed to reach the goal of a simple yet extensive tool. There are four major derivables in the framework: company, resources, customers, and external environment. This framework when complemented with other essential **variables like financial data, sales figures and company operations and strategy** can form an effective tool for the sales and product management teams to come up with ideas for potential service business opportunities.

*Table 5: Final Framework for resource evaluation and customer information*

Company	Resources and Capabilities	Customers	Service offerings based on RBV
Core competence of the company How they create value How they prioritize customer relationships Services outsourced by the company Steps involved in sales process How are they better than their competitors Futuristic goals	What are your most valuable / inimitable resources How are they monitored and regulated How agile is the company to leverage required new capabilities How coordinated are their sales and product management teams.	Who are they and what do they do? Any demands from them for specific s class of services High priority customers vs basic customers What are the customer expectations? Any changes in foreseen in the customers'' business environment Complaints and reasons	Based on the existing resources, what type of services fall into the initial template Brainstorming and idea generation Innovations and transformations group

## 6.4 Limitations of the study

This study was conducted using empirical data from three different product based companies. The case companies operate in different industries, are of different size in terms of their financials, global presence and number of employees. When case companies are so different in nature, the study needs to take a certain leverage to find a common ground between them in order to create coherent framework. For example, the common variables chosen for this study between the different companies are their resources and capabilities to enable innovation. In reality there are several other parameters which determine a company's capacity to enable itself into service innovation. Including all such parameters would require involvement with more number of case companies and the study would be far more tedious and comprehensive.

The thesis carried out is based on the empirical data and the publicly available information about the chosen companies along with some generic theoretical concepts and educated assumptions. When any company is trying to use this study to understand the methods for service innovation, it must be kept in mind, this study must be considered as a precursor in the direction of a comprehensive analysis of service business innovation.

This research is not focussed on one product centric company and the issues the company would face in its transition from goods dominant to service dominant business. Concepts the cultural change in a company structure were dealt in a broad bracket considering the basic similarities between the case companies taken for this study. In reality culture change is a vast domain of study which can lead to a comprehensive research with respect one single case company chosen for this thesis.

Having said that, this research can prove to be very effective for a typical product based company to understand the intricacies of servitization, the requirements enabling which enable innovation, the factors that contribute to value creation and the aspects responsible for a company to lead the transition from product centric to service dominant business.

## 6.4 Future scope

Services have always been an important part of any sort of business. Lately the importance of services as a value generating business component has been under a lot of scrutiny and has been a major case study across the world by academicians and companies. Many innovation models have been built and employed in businesses in the recent times and the results of which have been promisingly exemplary. Several product based businesses are realising the importance service business not only as to nurture their relationships in the supply networks, but also its value creating potential and are considering a gradual transition to being a service based businesses. The transitions as of now are happening slowly but steadily but with a proper research and foundation on the subject and pre-emptive actionable strategies, this process can be normalised to a much superior extent.

This study was merely made on an academic level based on the research interviews conducted at three chosen product based companies. Although all the data accumulation that took place for this study has been attempted to be kept accurate, there are bound to be many unknown variables and parameters which are close to the strategies of the case companies.

A study from the resource based view requires a lot of inside data of a company which may sometimes not be available to the authors working externally to a company's environment due to company confidentiality issues. Conducting this research and study inside one single company within the vicinity of its project management and sales management team could lead to a comprehensive set of results which may be very effective for a the case company to apply them in real time.

Finally, a company which has to undergo gradual overhauling in its structure will encounter the need for a change in culture in order to adapt to the new operating business model. The study about the management of the changes encountered by a company undergoing structural transition is called change management. The research in the field of change management pertaining to the adoption of service business models would be an interesting direction to consider for aspiring researchers.

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# APPENDIX

## Interview questionnaire for the case companies.

The whole interview was divided into seven sections.

### Section 1. **Background information of the interviewee**

1. Your professional background and history?
2. Your history with the current employer
3. Describe your current position at the company and how is it related to service business segment'

### Section 2. **Information about the company**

1. What do you consider, as you are the core competence of your company?
2. How do you create value?
3. What do relationships with other companies mean to you?
4. What do relationships with customers mean to you?
5. Are there any services which you outsource?
6. What are the steps in your sales process and how are you involved in it?
7. How are you better than your competitors?

### Section 3. **Understanding the current situation of the company.**

1. What are the recent changes (if any happened) you have witnessed in the company?
2. Do you have any goals set to achieve?

### Section 4: **Understanding the company resources and capacity**

1. What do you think are the most valuable assets of the company?
2. How do you monitor and regulate your resources/assets?
3. How vigilant are you with respect to reconfiguring your skill set, 8resources and capabilities)
4. How agile are you to leverage the capabilities that you don't have currently?
5. Do you have any specific demands from the customers in terms of desired services?

### Section 5: **Customer information**

1. Who are your customers? What do they do?

2. Many small customers vs few key customers
3. What do they expect from you
4. How does the change in customer's business environment affect you?
5. What are the most commonly heard complaints from the customers' side?
6. Can you reveal any successful or unsuccessful cases?

Section 6: **Relationship dynamics with the customers**

1. What do they value in your offering?
2. How do you think your combination with them could improve?

Section 7: **Outlook of the company / Futuristic vision**

1. What direction do you think you are headed in?
2. Do you foresee any expected changes in your industry?
3. How do you think your customer value would improve in the next five years?

Additional question: If you consider your company as a human, what do you think his/her situation in life currently is? Steadily married / Single and independent / Social Butterfly.