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The Paradoxes of Business Model Innovation:

A study of competing concerns in e-commerce

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Abstract

We have all read about digitalization and the rapid pace of technological progress that is changing the business landscape. Companies are forced to adapt as customers' expectations become higher as well as find new ways to create value in order to stay competitive. In order to benefit from the business opportunities that arise from digitalization, companies need to adjust their traditional ways of doing business. According to existing literature, organizations need to include business models in their innovation processes, but there are few companies that fully understand the process of business model innovation and the value that it generates. Companies face a challenge when it comes to maintaining the traditional way of conducting business and at the same time adapting to new innovation practices. This is something that can be recognized in the manufacturing industry. This study in turn investigates the contradictions that manufacturing companies face when exploring new business models and we have with the help of a qualitative study looked into how these companies manage establishing an e-commerce. This is of importance as it has become more difficult for companies to retain traditional business models whilst adjusting to digitalization without destroying existing fundamental business development practices.

Keywords: Business models, business models innovation, Business Model Canvas digitalization, manufacturing industry

Abstrakt

Vi har alla läst om hur digitaliseringen och den snabba teknologiska utvecklingen påverkar affärslandskapet. Företag tvingas anpassa sig och hitta nya sätt att vara konkurrenskraftiga på, samtidigt som kunders förväntningar blir högre. För att kunna ta till vara på de möjligheter som kommer med digitaliseringen måste företag justera sina traditionella sätt att bedriva sin verksamhet på. Enligt existerande litteratur måste företag inkludera sina affärsmodeller i innovationsprocessen, men det är få företag som förstår processen för affärsmodellinnovation och det värde som det genererar. Företag står inför en utmaning när det kommer till att bibehålla det traditionella sättet att bedriva sin verksamhet på samtidigt som de anpassar sig till nya sätt att innovera sig på. Detta är något som blir tydligt inom den tillverkande industrin. Den här studien undersöker de motsättningar som tillverkande industriföretag står inför när de utforskar nya affärsmodeller och vi har med hjälp av en kvalitativ studie tittat närmare på hur dessa företag hanterar etablerandet av en e-handel. Det här är av stor vikt eftersom det har blivit svårare för företag att bibehålla sina traditionella affärsmodeller medan de anpassar sig efter digitalisering, utan att förstöra existerande fundamentala affärsutvecklingsprocesser.

Nyckelord: Affärsmodeller, affärsmodellinnovation, Business Model Canvas, digitalisering, tillverkande industrin

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1. Introduction

Digitalization is changing today's business landscape and forcing companies to operate in new ways (Kane et al., 2015 & Yoo, 2013). The development of more advanced digital technology is redefining society and can be viewed as an enabler of innovation and disruption (World Economic Forum, 2016). Hagberg et al. (2016) argue that digitalization is one of the most significant continuing transformations that has affected society and the different elements of business. According to Zimmermann (2000) these elements consist of structures, processes, products as well as infrastructures and services. This new economy, driven by digitalization, therefore contains not only technological but also structural and process-related challenges and opportunities. World Economic Forum (2016) points out that a challenge for business leaders across all sectors therefore is to develop strategies that support these transformations in organizations. Digitalization is affecting barriers of entrance and in turn facilitating collaboration with external parties. This has led to a shift in innovation practices, from being firm-centric to becoming more ecosystem-based (Selander et al., 2013). In order to stay competitive in this new business landscape, the traditional structures of companies such as hierarchies, need to be transformed (Iansti & Levien, 2004). One common approach is engaging in networks, where collaboration with external actors becomes essential. Both Selander et al. (2013) and Iansti and Levien (2004) argue that ecosystems are becoming a central part in modern business. However, Iansti and Levien (2004) argue that engaging in networks creates several challenges for firms such as, identifying the best ways to capture value in the network, creating appropriate protection methods as well as selecting suitable actors to collaborate with. It is therefore necessary for firms to develop a strategy that helps ensure the success of the ecosystem as a whole.

The effect of digitalization on organizational structures has created new opportunities for incumbent firms and at the same time poses several substantial contradictions. According to Damberg et al. (2015) the opportunities that arise from digitalization are a wider customer segment, a customer reach beyond geographical boundaries as well as a shift from a regional commerce to a global e-commerce. The contradictions however, are even greater and companies must not only implement new technologies, but also develop strategies that can meet these new standards. This in turn faces incumbent firms with the challenge of how to acquire the right knowledge and capabilities in order to address these issues (Chesbrough, 2007). This becomes an even bigger struggle for manufacturing companies since it requires them to go beyond traditional industry barriers in finding new solutions. Manufacturing companies often develop and produce more advanced products and services (Bossen & Ingemansson, 2016). Therefore, in order to stay competitive in today's market, manufacturing companies are required to innovate and search for new methods on a regular basis. In other words, manufacturing companies need to find a way to successfully adapt to digital transformation. Bossen and Ingemansson (2016) point out that as digitalization is starting to take over the manufacturing industry, new possibilities concerning product development, value chains as well as new customer relationships are emerging. A challenge for manufacturing companies is therefore finding a way to align with the pace of change in the digital economy, without destroying existing fundamental business development practices.

In order to realize the business potential in digitalization, manufacturing firms need to develop the capability for managing contradictions between traditional strategies and the new opportunities that come from digitalization. One way to do this is through innovating the firm's business model and drawing benefits from the value that is provided. However, Chesbrough and Rosenbloom (2002) argue that it is difficult for companies to understand the importance of having a well-developed business model and its effect on the organization. Chesbrough (2010) claims that experimenting with business models is crucial for incumbent firms in order to adapt to changes and competition in the marketplace. A business model should generate revenue for the company and forcing a new technology onto an older business model will both decrease the economic value of the technology as well as eliminate any objective value for the firm. Despite this, organizations still have the impression that it is possible to promote new technologies and innovations through an already existing business model.

Hagberg et al. (2016) argue that by re-thinking their business models, incumbent firms may have the power to innovate and stay ahead of competition. A particular business model innovation that has had a significant increase over the years due to digitalization is e-commerce, which has been crucial for companies in order to meet customer expectations and adapt to changes in the marketplace. Spieth et al. (2014) claim that an e-commerce can be viewed as a business model innovation due to the fact that it changes several premises in a business which must be altered in the business model in order to extract value. This in turn, has created new ways of conducting business that need to be balanced with the traditional way of conducting business. An example of a traditional industry that has innovated its business model in order to adapt to digitalization and e-commerce is the food industry (HUI Research, 2016). Grocery stores have innovated their business model by offering the possibility to purchase groceries online in a combination with the old, traditional strategies of physical stores and successfully innovated their business model. However, Christensen and Raynor (2003) also state that even though business model innovation is of crucial importance for today's incumbent firms, there is more to the problem. A new business model may involve eliminating relationships and barriers, such as distribution channels or end customers, which companies are not ready to sacrifice. Companies also feel that innovating their business models may jeopardize the existing value in the firm and cause tensions between existing and new business models. Still, Chesbrough (2010) believes that the sooner incumbent firms associate business model innovation as an asset rather than a liability, the better. In other words, the challenge that incumbent manufacturing firms are forced to face is finding a way to manage the contradictions that arise between traditional and new strategies when innovating their business model.

In this master thesis we seek to better understand how manufacturing firms can innovate their business models by balancing contradicting strategies caused by digitalization in the form of establishing an e-commerce without destroying existing fundamental business development practices. Therefore, we ask:

How do manufacturing firms manage contradicting strategies when exploring new business models?

2. Business model innovation

2.1 What is a business model?

Chesbrough (2007) argues that every company has a business model even if it is not always articulated as one. A business model has the purpose of two functions; value creation and value capturing. A company creates net value from various activities such as the process of acquiring raw materials and fulfilling customer demand. The outcome of these activities is a new service or product. The second function of a business model is value capturing and this means that the business model can be used in order to support the process of value capturing when a company is developing and operating business activities. If the company cannot obtain any economic value from these activities, it will be difficult for the firm to develop sustainability over time. A business model serves the purpose of generating revenue at a reasonable cost and creates opportunities for value creation and value capture (Gambardella & McGahan, 2010). Shafer et al. (2005) also claim that a business model should represent a firm's core logic as well as the strategic choices for identifying and capturing value in the organization. Even though it is of importance that the business model should entail a representation of what the firm stands for, it is often forgotten that it should give the firm a general view of how the business is operated in the form of structures, roles and processes (Spieth et al., 2014 & Martins et al., 2015). A business model should contain the six following aspects; a value proposition, identification of a market segment, a definition of the structure of the value chain, a specification of the revenue mechanisms, the positioning of the firm and a formulation of a competitive strategy (Chesbrough, 2007).

Chesbrough and Rosenbloom (2002) argue that a value proposition explains how the company creates value through its offerings (product and services) to the customers. Schneckenberg et al. (2016) emphasize that a value proposition should specify how the company delivers value to its customers. However, companies tend to be good at creating value but do not know how to capture it (Shafer et al., 2005). Chesbrough and Rosenbloom (2002) explain that the identification of the market segment means identifying the users that will find the offerings in a firm useful and to what purpose. Within the market segment, a company should also identify the firm's revenue generation mechanisms which means the process carried out in order to achieve profit. Gambardella and McGahan (2010) underline that a business model should reflect what customers want, how they want it as well as how an enterprise can best meet those needs.

Chesbrough and Rosenbloom (2002) also argue that defining the structure of the value chain within a firm is a necessary part of the business model because it entails creating and distributing the offering to users. This is also an important action because it supports the positioning of the firm in the value chain by discovering complementary resources in the firm. Another important part of the business model is to specify the revenue mechanisms that the firm profits from based on the offerings. These mechanisms entail the cost structure and the profit potential that is connected with the chosen value chain structure and value proposition. Spieth et al. (2014) also claim that this is a driving force for engaging in developing the firm's business model because the firm must understand the revenue streams when explaining the

business to shareholders such as investors. It is also important when it comes to explaining to employees how the business is operated. Chesbrough and Rosenbloom (2002) continue to explain that when defining the positioning of the firm in the business model, it is important to describe it within the value network as well as between suppliers and customers. The positioning should also include potential threats from competitors. The formulation of a competitive strategy in a business model is as equally important as the rest of the business model and this strategy can help the company to become even more innovative and gain competitive advantage.

2.2 What is business model innovation?

Bucherer et al. (2012) and Teece (2009) argue that a business model must be managed over time and requires adjustments due to competition, technological changes and market shifts. It has become more difficult for companies to retain viable business models and therefore it is necessary to constantly develop the business model which is a process called business model innovation. Casadesus-Masanell and Zhu (2013) argue that the opportunities for configuring business models today has increased due to several different factors. The enablers leading to these new opportunities are technological progress, new customer preferences and deregulation. Business model innovation usually affects the entire enterprise and can thereby lead to sustainable business success. Business model innovation occurs when a company intentionally changes the core logic of a firm and its strategies in order to extract value (Bucherer et al., 2012). Casadesus-Masanell and Zhu (2013) define business model innovation as searching for new ways for an organization to create and capture value for its stakeholders.

Gambardella and McGahan (2010) explain that firms need to constantly adapt their resources over time in order to ensure their relevance to the firm's customers. In other words, business model innovation can be associated with a firm finding new effective ways to use their assets. Bucherer et al. (2012) agrees by arguing that the value proposition and the firm's offerings are connected with the business model and if one of the either changes, the rest will have to be adapted as well. In other words, a firm needs to adjust their business models when developing new products and services. According to Desyllas and Sako (2013), this makes it possible to realign systems and processes with the new products and services. Innovating business models in incumbent firms means transforming the existing business models and replacing them (Schneckenberg et al., 2016). Chesbrough (2007) argues that due to higher costs, innovation today must include business models. Improving an organization's business model is usually more valuable than a good idea or technology. However, in order for an organization to be able to innovate their business model they need to understand the purpose of the model and what options are available for improving upon it. Chesbrough (2007) also explains the importance of leadership when it comes to business model innovation. It is impossible for one person in an organization to on its own obtain the authority or capability to innovate a business model. The involvement of top leadership, that is responsible for all the different ways the organization creates and captures value, is a requirement.

2.3 Contradictions in business model innovation

Chesbrough (2007) argues that innovating a business model takes time and resources as well as management and is not something that companies should rush into if they stand in front of a crisis of some sort. Ideally, the company has time to experiment with different kinds of business models and should have carried out a few tests before implementing it in larger parts of the organization. Many firms forget how valuable a business model is and can be to a company (Chesbrough, 2007). However, Amit and Zott (2012) argue that business model innovation is an enabler for creating additional value to the organization and it can lead to identifying new markets or exploiting new opportunities in markets that the firm has already established. These opportunities can be acknowledged as a competitive advantage and are valuable when competing with companies in the same industry. According to Sinha and Singh (2016) an example of a case where business model innovation has led to new market opportunities beyond regional and geographical barriers is companies who have adjusted their business models to include e-commerce.

Furthermore, business model innovation is critical for a company's success in a long-term perspective. However, it is still a subject that faces resistance among organizations (Bucherer et al., 2012). Chesbrough (2007) argues that no one can foresee the future or how a company or its customers will react to a new business model. Either the firm invests in business model innovation or positions themselves on the market with an outdated business model and competes with companies who actually took the risk to invest in a new business model. Even if this is incredibly difficult to achieve, business model innovation is money well spent if companies encounter those who actually tried or startups that have a more modern approach to business. Chesbrough (2010) explains how organizations believe that it is possible to promote new technologies and innovations through their existing business model, but what they are not aware of is that it can harm the company even more. A common mistake among incumbent firms is that they lack an understanding for what the value drivers are in an organization and how the value drivers are interconnected with the business model (Schneckenberg et al., 2016). Still, business model innovation is of importance but it does not mean that it is an easy process (Chesbrough, 2007). Companies today need to find a balance between the contradictions that arise from conducting business traditionally and innovating their business model.

In order to answer the research question of this study, we have created a framework containing different contradictions within every dimension of a business model that arise when manufacturing firms explore new business models. We have applied the Business Model Canvas presented by Osterwalder and Pigneur (2010) as a part of our theoretical framework due to it being a commonly used model for innovating business models. We chose to use this model since it summarizes the relevant dimensions that make up a business. Based on this framework, we have identified contradicting strategies within every dimension of the Business Model Canvas (see appendix 2) that arise from balancing traditional and innovative business development practices. Later in this paper, we have come to identify these contradictions in six different manufacturing companies.

3. Contradicting strategies within the Business Model Canvas

Osterwalder and Pigneur (2010) argue that a business model can be viewed through nine building blocks in a model called Business Model Canvas, which describes the process of how a firm tends to earn money. In this study we have identified contradicting strategies within every dimension that specifies the traditional vs the innovative way to conduct business (see appendix 2). Later in this paper, we have come to identify these contradictions in six different manufacturing companies.

Value proposition: Product vs service

Osterwalder and Pigneur (2010) as well as O'Neill (2015) explain that the first block is called *value proposition* and involves the products or value-added services that constitute the value offering and benefits for a customer segment. The value proposition is important for a business model since it determines why customers choose a certain company over another. A value proposition can be innovative and promise the customer a disruptive product or service. However, many companies choose to have a value proposition that is consistent with the current offers in an existing market but add their own characteristics to it. A firm's value proposition can be adjusted to what kind of products an organization wants to earn money from and focus on selling (West & Gallagher, 2006). According to Chesbrough (2010) a well-developed business model that is adapted to what the company actually offers, will generate revenue for the firm. If the business model does not reflect what the firm is actually offering, there is a risk that the company will lose customers since there is no value creation and no reason for them to pay for the firm's products or services. According to Jacob and Ulaga (2008) companies are getting more interested in adding services to their products in order to remain competitive, create business opportunities and develop a long-term growth in their industries. As competition increases, it becomes more important for organizations to offer the customers something valuable in addition to their traditional products. The contradicting strategies in this dimension, that organizations are faced with, involve finding a balance between product vs service offerings in their value proposition. The traditional strategy for establishing a value proposition includes solely focusing on a firm's original product. The benefit with this strategy involves establishing a strong brand and economic value considering that the customer is familiar with what the company offers. The innovative alternative involves offering services to the customers instead of the original product. The benefit with this strategy is that companies become more competitive by offering more than only one product. This makes it possible for a company to strengthen their position in the market by obtaining a higher level of customer satisfaction.

Revenue streams: Core vs complement

The second building block is *revenue streams* which is the revenue that a company generates from its customer segments (Osterwalder & Pigneur, 2010). The value creation in every segment attracts customers and is what makes them continue to pay for the product or service. A company can divide its products into two categories; core innovation and complementary products (West & Gallagher, 2006). In some cases, the complementary products can be more valuable than the core innovation and therefore generate more economic value to the company. It can be products that are more difficult to imitate or that belong to a product segment that is

rapidly changing. For example, Apple offers their customers complementary products that will only work together with their core innovation (iPhone). If a customer purchases a newer model, the design of the hardware may have changed and therefore requires newer complementary products.

West and Gallagher (2006) emphasize that whether a firm chooses to focus on selling complements or its core innovation, it will contribute to the organization's economic value and formulate their value proposition. Firms can also make profits from focusing on their core innovation but still offer complementary products from their own product line or as donations from other companies to be able to offer customers an overall solution. However, Wareham et al. (2014) argue that it is difficult to find the right balance between the core innovation and complementary products. A challenge with this approach is to convince the customers that complementary products will increase the value for them rather than decrease it. Another challenge is that the customers can perceive a change in product focus as a mistrust for the company and choose another brand as their supplier. The contradicting strategies in this dimension, that organizations are faced with, involve finding a balance between core vs complement in their revenue streams. The traditional strategy for maintaining revenue streams includes focusing on the firm's core innovation as their only revenue stream. The benefit with this strategy involves creating a strong relationship with customers, by constantly developing the core product in order to best meet customers' specific needs. The innovative alternative involves focusing on complementary products which can provide more economic value to the company through several revenue streams and by being more valuable than the core innovation. Other benefits are that complementary products are more difficult to imitate and can easily be more adaptive to changes in the market than the core innovation.

Cost structure: Manual vs automation

According to Osterwalder and Pigneur (2010) the third block is *cost structure* and includes all of the costs that concern the governance of the business model. These costs can arise from creating the value proposition, developing as well as maintaining relationships with customers, partners and suppliers. To be able to calculate these costs, the firm needs to define its key partnerships, key activities and key resources. Scheer et al. (2004) emphasize the importance of optimizing the business due to the tough competition. In order to obtain a long-term growth, companies need to develop new products and services, reduce the costs of conducting the business and innovate continuously. It is not enough to change work processes with best practice in order to reduce costs, real progress is achieved through innovation. An efficient way to reduce costs is through information systems that support the business processes. With technology and innovation, companies can replace manual processes with automated processes and become more efficient while reducing costs. The contradicting strategies in this dimension, that organizations are faced with, involve finding a balance between manual vs automated costs. The traditional strategy for maintaining a successful cost structure is based on the use of manual work processes. The benefit with this strategy is the ability to obtain a high level of control concerning a company's costs. The innovative alternative involves a cost structure based on automated work processes. With the help of technology and automated processes it is possible to minimize costs in the long run and avoid human errors.

Customer segments: Maintain existing relations vs exploit new opportunities

O'Neill (2015) as well as Osterwalder and Pigneur (2010) state that the fourth block is called *customer segments* which can be referred to as the groups of people that a company is directing its business towards. Without a clear customer segment, there is a risk that the business model will collapse since it is built around the customers. To be able to better understand customers and adjust the firm's products after their customers' needs, a firm needs to divide them in different segments based on common behaviours and needs. Danneels (2003) argues that there are both positive and negative sides with maintaining existing customer relationships and exploiting new relationships. The positive sides with maintaining existing relationships are that the firm can get a deeper understanding for the customers' needs and can tailor the products based on those needs. The firm can establish close and loyal relationships while forecasting what the customers may want next. The negative sides involve that companies tend to get stuck in the development of new products and miss out on several opportunities. The positive sides of exploiting new opportunities in customer segments are that companies will become flexible and can manage a fast-paced and dynamic environment while exploring new. The negative side is that customers involved in existing relationships may become offended or insecure when a company explores new opportunities and customer segments. The contradicting strategies in this dimension, that organizations are faced with, involve finding a balance between maintaining existing relations vs exploiting new opportunities in their customer segment. The traditional strategy for managing customer segments involves maintaining existing relations with customers. The benefits with this strategy are the possibilities to become an expert within a specific customer segment concerning the existing customer needs as well as reach a higher customer loyalty and satisfaction. The innovative alternative involves exploiting new opportunities in customer segments. By opening up for other alternatives, a company can increase their revenue and reach a long-term growth considering that the firm is more adaptive to change.

Customer relationships: Intermediaries vs end-customer

Osterwalder and Pigneur (2010) argue that the fifth block is called *customer relationships* and it entails the relationships that the firm has with the different customer segments. The company has the responsibility to establish a type of relationship that is suitable with each segment because the relationship affects the overall customer experience. The benefit of establishing these kind of relationships is that it becomes easier to retain customers as well as acquire new ones as the sales increases over time. Bossen and Ingemansson (2016) argue that due to the growth of digitalization, new possibilities in product development or customer relationships are emerging within the manufacturing industry. Companies need to innovate their traditional businesses and adjust to the digital economy without destroying existing fundamental business development practices. The challenge is to find a way to align these two predicaments without losing customers' trust and the relationships as well as trying to convince the customers that innovating the businesses is a must. If customers do not want to adapt to the changes that the company is making, their investments will not give any value for the organization and the firm will also lose its market shares. Christensen and Raynor (2003) agree and explain that innovating the business model can eliminate the existing relationships with customers and

partners. This is something that worries companies and that they do not want to sacrifice in order to develop their businesses further. The contradicting strategies in this dimension, that organizations are faced with, involve finding a balance between reaching out to intermediaries vs end-customers in their customer relationships. The traditional strategy for managing customer relationships is by obtaining a strong relationship with intermediaries. The benefits of including intermediaries in a company's go-to-market approach in the form of B2B, are to preserve long-term relationships and customers' trust. The innovative alternative involves opening up the business in the form of B2C and reaching out to new actors such as end-customers. By acquiring new actors, the company can widen their customer base globally and possibly increase their sales over time.

Channels: Offline vs online

Osterwalder and Pigneur (2010) believe that the sixth block is *channels* and it entails the different channels that the firm communicate to its customer segment in order to present the value proposition. The communication is enabled through distribution, sales or communication channels and is an important aspect of the customer experience. The channels provide with marketing of a firm's products and services to customers, a value proposition, customer support and allow customers to acquire specific products that are easy to find (Christensen & Raynor, 2003; O'Neill, 2015). Osterwalder and Pigneur (2010) argue that it is of importance that a company finds a combination of channels that draws the customer's attention and satisfies its needs without exaggerating to be able to present the value proposition. The channels can be owned by the company or be provided through partners such as retail stores or web sites. Shankar et al. (2003) argue that managers are worried that customer satisfaction and loyalty will decrease when conducting business through online channels because customers can easily search for information and for other alternatives on the internet. When conducting business offline, a company can control the customer and achieve a personal interaction more easily. Srinivasan et al. (2002) emphasize that online channels can also be beneficial because with information systems, a company can tailor its offerings to a specific customer and give personalized offers. The contradicting strategies in this dimension, that organizations are faced with, involve finding a balance between offline vs online channels. The traditional strategy for reaching out to customers through channels is by using offline channels, in other words, not using the internet. The benefit of using this strategy is to focus on the physical interaction with the customers and conduct customer visits when making deals. This in turn increases customer loyalty and satisfaction. The innovative strategy in this case involves reaching out to customers through online channels. Using the internet to communicate with customers can be beneficial for the company due to the fact that it is possible to create customized and tailored offers to customers.

Key activities: Hierarchy vs network

O'Neill (2015) as well as Osterwalder and Pigneur (2010) argue that the seventh building block is called *key activities* and constitute the work that a firm does in order for the business model and the organization to function. The purpose with the key activities is to create value and offer a value proposition, to maintain customer relationships, to reach markets and increase the revenues. Bossen and Ingemansson (2016) argue that in order for established manufacturing

firms to stay competitive among start-ups and competitors, they are required to be flexible to the fast-paced environment and innovate traditional activities and find new methods to operate on a regular basis. Iansti and Levien (2004) claim that companies need to transform the traditional organizational structures such as hierarchies, in order to be adaptive to changes. A common strategy is engaging in networks, where collaborating external actors become more flexible. Kaldis et al. (2007) argue that the benefits to work in an organization with a network-based structure, are that the employees have more freedom to work across boundaries and encourages innovative work processes than a hierarchical structure. Hierarchies are often characterized by a higher level of control and less flexible to changes. A network-based organization is also more easily adaptive to changes in the environment than hierarchies. However, Chesbrough (2007) also emphasizes the importance to have a leadership that have the ability operate a business model innovation and companies often have an absence in leaders that have the authority or the capability to push through a transition of that size. The contradicting strategies in this dimension, that organizations are faced with, involve finding a balance between having a hierarchy vs network structure in their key activities. The traditional strategy for managing key activities in an organization is through applying a hierarchical structure. The benefit with this strategy is that companies often have more control over the activities that are carried out in a company. The innovative alternative involves a more network-based structure that allows companies to be more flexible and adaptive to changes in the market as inside the company. This in turn creates a higher competitive advantage.

Key partners: Strong ties vs loose coupling

The eight building block is according to Osterwalder and Pigneur (2010) called *key partners* and involves the partners and suppliers of a network that is necessary in order for the business model to function. Partners is an important aspect of a business model because they can compose a network that reduces risk, increases the resources or create alliances which can optimize a firm's business model. Even though key partners are an important aspect of a business model, Christensen and Raynor (2003) argue that a new business model can eliminate the existing relationships with key suppliers and partners. This is something that worries companies and do not want to sacrifice in order to develop their businesses further. Key partners can be referred as a network with different external actors that collaborate in order to stay competitive in the business landscape according to Iansti and Levien (2004). This can be a challenge as well with identifying the best ways to capture value in the network, creating appropriate protection methods as well as selecting suitable actors to collaborate with. Eisenmann et al. (2006) argue that a situation when different actors can draw benefits from one and another actions is called a network effect. A type of network effect is called same-side network effect and it occurs when there are more actors on one side of the network which in turn creates an increased or decreased value for the actors that are on the same side. This type of network effect has usually a negative outcome and can disrupt the relationships between actors.

Danneels (2003) argues that there are both positive and negative sides with having a few strong ties among partners or having many loose coupling. The positive sides strong ties are that the firm can establish close and loyal relationships with partners that may be beneficial in the the

future. The negative sides are that companies tend to get stuck in development of new products and miss out of opportunities. The positive sides of having many loose coupling with partners are that the firm will become more open to opportunities and can manage a fast-paced and dynamic environment. The negative side is that existing relationships with partners may be offended or unsecure when a company explores new opportunities and networks with other actors. The contradicting strategies in this dimension, that organizations are faced with, involve finding a balance between strong ties vs loose coupling concerning key partners. The traditional strategy for managing relationships with key partners is by managing a few strong ties rather than several. This strategy is beneficial for companies because they can focus on establishing strong and loyal connections with partners. The innovative alternative involves managing many loose coupling relationships with partners. The benefit of managing relationships using this approach is that the company can have several actors to network and cooperate with. This can be beneficial when conducting business in a fast-paced environment.

Key resources: Internal vs external

Osterwalder and Pigneur (2010) continue to explain that the last block is called *key resources* and involves the assets that the firm is dependent on in order for the business model to work. In order for the firm to create value and offer a value proposition, the company must have the right resources to do that. These resources are also important when it comes to maintaining customer segments, reaching markets and for increasing the revenues. It is not necessary that the resources are owned by the company itself, they can be owned by key partners. The resources can be divided into four categories; physical, intellectual, financial and human. Physical assets are in the form of buildings, machines or manufacturing facilities. Intellectual assets are in the form of brands, customer databases, knowledge that is protected by patent or copyright. Financial assets are in the form of money and human are assets in form of people and their competencies.

Chesbrough (2007) argues that in order for incumbent firms to be able to address the challenges associated with digitalization, it is necessary for them to acquire the right type of knowledge and capabilities. Wareham et al. (2014) points out that in an ecosystem it is important to collaborate with other actors in order to access a larger knowledge base, as well as other resources that can contribute to the development of new innovations. It is important for an ecosystem to contain a sense of cohesion when it comes to what focus the ecosystem should have, a large social good, a wide collection of best practice as well as a portfolio of reusable knowledge. This will in turn benefit the ecosystem as a whole and the challenge is to provide the right incentives for all actors to contribute. Wareham et al. (2014) argues that the aligning of individual and collective incentives becomes an even greater challenge in industrial ecosystems. This is due to the fact that actors in an industrial ecosystem often work together to deliver a product or service to the customer. It is important for actors in an ecosystem to work together in assembling different capabilities and knowledge in order to create effective solutions for customers. The contradicting strategies in this dimension, that organizations are faced with, involve finding a balance between internal vs external resources. The traditional strategy for managing resources in the organisation involves obtaining internal resources in order to conduct business. The benefit with this approach is that the firm can take advantage of

internal resources rather than invest time and money in searching for resources externally. The innovative alternative for managing resources is through obtaining external resources. By obtaining external resources, the firm has the opportunity to extract valuable assets from outside the company that may help them to achieve a higher level of efficiency.

4. Method

4.1 Research method

The purpose of the study was to investigate how manufacturing firms can manage contradicting strategies when engaging in business model innovation in relation to establishing an e-commerce. It was therefore relevant to examine how different manufacturing firms deal with digitalization today and the contradictions that they face in relation to developing their business model. A qualitative research method was therefore chosen, which Patel and Davidson (2011) as well as Yin (2011) describe as an appropriate approach when it comes to obtaining a deeper understanding of people's experiences and perceptions. Yin (2011) argues that a qualitative research method can be used in order to explain real-world events with the help of different concepts. A qualitative study might in turn also lead to the development of new concepts. The choice of a qualitative method can be useful when it comes to collecting, integrating and presenting data from several different sources, which is useful when studying real-world settings. In other words, a qualitative method, such as interviews and observations, is useful when it comes to collecting a large amount of information and comparing data from different sources. It also helps the interviewer see between the lines and thereby reveal deeper meanings concerning the respondent's motives.

Yin (2011) explains how a qualitative research does not have a fixed design of how it should be carried out. The researcher is thereby given a certain degree of freedom in customizing their own design that is most accurate for the study carried out. This design can also be adjusted along the way to best fit how the course of the study evolves. Yin (2011) states that a qualitative research method can either have a deductive or an inductive approach. An inductive approach is based on letting data lead to the emergence of concepts, whilst a deductive approach is based on letting the concepts lead to a definition of the relevant data that needs to be collected. In this study an inductive approach was used, where concepts were created based on the collected data from the interviews. In this way, Yin (2011) argues that an inductive approach can help make certain insights into the real-world events that are studied more obvious, since the empirical data collection does not follow certain concepts that have already been pre-established

4.2 Data collection

A multiple case study was conducted including six different companies that either already had an e-commerce today or were exploring the possibilities of establishing one. Eisenhardt (1989) describes case studies as a way to create an understanding for how companies address a certain problem at a specific time. Case studies often include methods such as interviews and observations. Therefore, this qualitative study was conducted in the form of several semi-structured interviews, which Backman et al. (2012) explain are commonly used in a qualitative research. This type of structure makes the interview questions easy to follow as they are based on a few categories that the interviewer wants to bring up. The benefit of having this structure in the interviews, is that the interviewer can ask unpredicted questions to the respondent and not be forced to follow a script. Patel and Davidson (2011) define a semistructured interview as consisting of both open and closed questions. We constructed our interview questions as a semistructured interview and with the help of several themes identified in our theoretical framework. The questions were structured based on the different dimension of a business model

and how these were affected by a business model innovation such as e-commerce. Patel and Davidson (2011) argue that this is an effective method when conducting qualitative interviews, where a certain structure or guide is provided. This in turn made it possible to control that all topics were covered in each interview. This also made it easier to compare the answers from the interviews with each other as well as with our theoretical framework and in turn made it easier to carry out our analysis. The choice to use a semistructured interview as a method for collecting data, created a lower level of structure and a higher level of standardization when conducting our interviews. The respondent was thereby given more freedom to develop their own opinions and at the same time we were able to control that the interview stayed on track with the help of our chosen themes (Patel & Davidson, 2011). By giving the respondent a certain degree of freedom, we were able to create more of a discussion and it was easier for the respondents to truly express their opinions.

According to Ahrne and Svensson (2011) there are different approaches when it comes to choosing which respondents that should be included in the study. A goal-oriented selection means that the researcher selects respondents based on the contribution to the study and the research question. Another approach is to choose respondents by convenience, where the researcher makes choices based on contacts and easy access. Our data collection is based on a goal-oriented selection and by convenience as we selected respondents based on those who had the opportunity to participate in the study and based on their role in the company.

4.2.1 Reliability and validity

Trost and Hultåker (2016) explain that in order for a study to be reliable it is important that the data collection is carried out in a stable way. In other words, the conditions have to be equal for all of the respondents included in the study. This involves that the questions have to be asked in the same way and the interview setting has to be designed in the same way for each respondent. Trost and Hultåker (2016) argue that if the study were to be conducted at a different time it should be able to give the same result as the first time it was carried out. An interview guide was used in order to ensure that the same questions were asked in each interview. We also informed the respondents about the purpose of the study and the purpose of their participation. We made sure that each interview was conducted in a quiet room and in an environment that the respondent felt comfortable in. Each respondent was also given the same amount of time to answer the questions. Trost and Hultåker (2016) state that the questions asked during an interview should be constructed in relation to the purpose of the study. Our interview questions were established with the help of our theoretical framework in order to capture the respondents' experiences concerning contradictions in the different dimensions of a business model. The questions included in the study therefore had a high level of validity as they were relevant in accordance to the purpose of the study.

4.2.2 Respondents

Six companies were involved in this study with a mix of large and small organizations located in South-West of Sweden in Västra Götaland county. The six companies belong to the manufacturing industry and offer different types of physical products. 4 out of 6 companies had established an e-commerce and the remaining 2 respondents had thought about establishing one

but did not conduct business with the help of an e-commerce today. We have chosen to anonymize the companies included in the study and they will instead be referred to as “Company A”, “Company B” etc. This was something requested by the respondents.

Respondents	Role of the respondent	Established an e-commerce?
Company A	E-business Developer	Yes
Company B	Process Manager	Yes
Company C	Chief Information Officer	Yes
Company D	Global Digital Director	Yes
Company E	Key Account Manager	No
Company F	Process Project Manager	No

Figure 1: List of respondents

4.3. Data analysis method

Braun and Clarke (2006) describe an approach for analyzing and identifying patterns in qualitative data. This method is called thematic analysis and it provides the researchers with a structural and systematic way of detecting themes by analysing the data from interviews, focus groups or qualitative surveys. The themes provide a framework based on the researcher’s observations and can therefore easily be analyzed. The benefit of implementing a thematic analysis is that it can be flexible in a way that it not only provides patterns within the data but also across the data. This means that a thematic analysis makes it possible to analyze patterns from the respondent’s behaviour, practice, views and how the person interacts with the interviewer. Braun and Clarke (2006) argue that patterns can be identified in two different ways where one approach is through inductive thematic analysis. It means that the patterns that the authors have identified are data-driven. The process of analyzing the data have in this case been made without trying to force the data into specific theories or preconceptions. Preece et al. (2011) also describe two techniques for analysing data in a qualitative study. These are identifying recurring patterns and categorizing data.

When we had conducted our six interviews, we transcribed and went through our findings in order to highlight the contradictions that we could find. We structured our data collection based on the three areas of a business; offerings, customers and infrastructure in order to structure our findings without mentioning every dimension of a business model, as we did in our theoretical

framework. When processing the data from our interviews, we realized that our theoretical framework needed to be adjusted based on the contradictions that we identified when collecting and reviewing our data. We had to extend our theoretical framework with additional theories, which in turn made it easier to know what contradictions we were looking for. After completing the framework, we could continue with the analysis. We structured the discussion in a combination of the disposition used in our result section and theoretical framework in order to enhance the line of argument throughout the paper. In agreement with Braun and Clarke (2006) as well as Preece et al. (2011), we analyzed our data and found patterns between the different contradictions included in our theoretical framework and our findings in our data collection. We used different colors in order to divide the data from the different interviews. This made it easier to identify patterns and compare how the respondents reasoned about the same questions. This approach, can be referred to as an inductive thematic analysis since our patterns were driven by the data we collected from our interviews (Braun & Clarke, 2006).

4.4 Limitations

This study did not concern all types of business model innovations instead it focused on a business model innovation involving establishing an e-commerce. This study did not concern several types of industries, instead it was limited to focusing on the manufacturing industry in Sweden. The study has been restricted from involving companies that acquire a B2C perspective (companies selling directly to end-customer), instead the study will only include companies with a B2B focus, meaning that other companies act as customers.

5. Results

This section is divided into three parts that are based on the three areas that, according to Osterwalder and Pigneur (2010), make up a business (offering, customers and infrastructure). Each of these three parts contain the different dimensions of a business model. Offering: value proposition, revenue streams, cost structure. Customers: customer relationships, customer segments, channels. Infrastructure: key activities, key partners and key resources.

5.1 Offering

Company B refers to digitalization as a valid reason to focus more on offering value-added services because it has become a lot easier for the customers to access information about suppliers due to the transparency on the internet. It has become more important to have the knowledge and understanding of which products are unique that companies can offer apart from others. Company D explains that digitalization has become a large part of their business and that it helps organizations to offer services to customers but at the same time increase the efficiency for all parties involved. The market has also started to demand both an optimal product and optimal service which has lead to that companies need to adapt to the changing market conditions: *“The products will be the same, but it is how we package our products that will differ”*. Company F believes that their existing product and customer segment can be replaced if the technology continues to evolve and if there is a shift between hardware and software. Despite that, the firm strongly believes that they will continue to sell the same product just as they always have and that nothing will change as long as everyone does what they always have done. However, if customers start expecting something else from the company, they will have to adapt: *“The software in everything will become the next value proposition if the customers request it”*.

Company E explains that their concern is to find what the customer benefits are and what it is that drives them to do business with the company. In the present, they have started to offer an overall solution to their customers where the firm offers education to manage the product for the same price. The key is to finding those things that customers do not value, but will value after companies offer it to them. The firm anticipates that they will focus less on the product itself and focus more on processing the information that they get from their customers and analyzing it in order to produce a better product. Company A is working on offering value-added services to their product and views it as a current concern. Instead of selling their core product, they are focusing on selling uptime to their customers, which means that the organization visits their customers and tries to anticipate when the products need to be replaced. This is a current strategy from the top management in the organization. This kind of strategy is something that company F has also chosen to invest in to be able to stand out from competition. They can see that there is a shift in the market and that new, innovative players have entered the same segment as them, offering their products through e-commerce. *“The customers are not only paying for the product, but for the overall solution and there is a whole bunch of business opportunities with the strategy to focus more on the services than the product.”* – E-business developer, company A

Company B explains that the value proposition is changing continuously and the service offers are becoming even more important. A type of value-added service is their e-commerce and it has changed how they can offer additional value-added services to their customers as for an example delivery, accessibility and environmental issues, which the customers value. By offering services such as education to the products, the firm can offer a customized overall solution based on the products they buy: *“We have noticed that an overall solution can increase our value proposition”*. This is something that company D also has invested in but instead of educating the customers in person, they have chosen to present this value-added service through e-learning which is possible because of the internet and is what their customers request: *“The customers can choose to educate them whenever it suit them best which is added value in itself and this has in particular affected our business model tremendously”*. Instead of facilitating the personal interactions between their customers and the firm, company C chose to invest in a more modern e-commerce because of the communication possibilities that the e-commerce enables. It has become more important to listen to what the customer demands and thereby have an e-commerce where the customer is able to interact with the organization throughout the process. The digitalization and recent technologies has created new opportunities for them which leads to the possibility of having the same physical interaction with the customer online and this is something that their customers value. The e-commerce has created new opportunities for them to offer additional value-added services to their original product segment.

The majority of the companies believe that transparency is increasing in every industry. Company A argues that the pricing mechanisms will be a huge challenge in the future because the more transparent the market becomes due to the internet and digitalization, the more centralized a company has to operate. Today, the firm is very decentralized and every market (locally) decides its own pricing by themselves. This creates an obstacle because the more transparent the market becomes, the more often their customers come to them and ask why another country has higher or lower price settings than their country. Company F explains that the reason why it is getting more transparent in the market is because companies are moving their businesses online and because people as consumers, in their private life, are so used to having every bit of information available on the internet when they search on their smartphones. It is only natural that people want the same accessibility in their work life as they have in their private life. It is because of the digitalization that it is so transparent today and companies have to defend their prices differently today than they used to, argues Company D.

Company B argues that it is important to be updated on which products that are more exposed to transparency and find other revenue streams to charge the customers. It is crucial to have the knowledge on which products that are unique and also to explain the prices to the customers: *“Our product is very common and customers can easily search for the cheapest price on the internet nowadays [...] you have to find value-added services that can become new revenue streams to protect the company from transparency”*.

Company A explains that every process will be automated in the future and organizations need to adapt to this kind of change as well. Even though automated processes are something that

people did not think were to happen a few years ago, it will only go faster from now on. That is why they have established an e-commerce and to minimize manual labour, increase the efficiency, reduce costs and to supply information for their customers even faster. The firm's decision to establish an e-commerce was also made because the employees did not want to invest time in performing unnecessary work and avoid the human errors. It is more valuable to focus on analyzing the business and finding new ways to help customers. Many of their customers however, face a larger amount of manual processes because they do not have an integrated system with the firm's. Company C explains that since they established a more modern e-commerce than just a website with basic information, they have been able to communicate with the customers in a whole different way. They can perform a dialogue with the customers online that at the same time register every interaction with the them. An e-commerce has different advantages but it will also affect what companies can control today (Company E).

5.2 Customers

Company F explains that they do not actively work with a digital platform today, in other words they have not established an e-commerce. For them it is important to have a more personal relationship with the customer, where they have the opportunity to come and examine the product. According to other companies in the market, who have a digital platform, 97 percent of business transactions start online and more than 40 percent of these products are not examined in real life before the purchase. Therefore, company F is determined that if they were to establish an e-commerce they might be able to take on a new customer segment. There might be a large customer segment that they do not attract today, that demand a different type of purchasing process. On the other hand, there might be a risk with changing the business model when it comes to maintaining relationships with intermediaries. Today these intermediaries have a very central role in the firm's business model due to the type of products that they sell, which makes this relationship very valuable for the success of the business. The physical relation also becomes very important and it is a challenge to replace with technology. *"If we can become more digital in our work, then we will become better at dealing with other types of customers compared to what we do today."* – Process project manager, company F

Company F explains that they are very customer centric in their business today. The main focus is to ensure the success of their customers. This will in turn lead to their own success as well. Every type of change that is carried out is based on providing customers with a competitive advantage that will make them the customers' first choice. The same thing goes for suppliers. The challenge is to maintain a good relationship with suppliers during a change in order to not lose them to competitors. It is important to listen to customers' wishes concerning ways to integrate with them, but at the same time a firm needs to test new solutions parallel to their traditional ways of conducting business. The challenge in this case is where to invest the company's resources. *"The changes we make need to be aligned with our customers' and suppliers' expectations."* – Process project manager, company F

Company A explains that their customer base does not change very often. However, due to digitalization new actors in the customer segment are starting to appear. The traditional way of

conducting business is changing. The challenge for them in this case is that this disruptive change of how to conduct business may have an effect on intermediaries, if customers choose to buy their products online. If the distributor does not choose to go online, then someone else has to. It is only a matter of time before this type of change is about to take place and will make these challenges very accurate. It is also important to determine how far customers have come in digitalization. They may be required to establish different strategies within different segments in order to be able to meet customers' demand. Finding a way to deal with their customers' different levels of digitalization is a big challenge. The firm needs to find a solution that is somewhat standardized, but also customized for their different customers. *"Our entire network is about to change."* – E-business developer, company A

Company C explains that e-commerce has made it possible for them to work with larger supply chains that in turn results in a larger customer base. Being digital is something that can be used as a sales argument in order to attract customers that do not belong to a certain supply chain. In turn, the firm believes that their e-commerce helps them attract certain types of customers that might otherwise have been hard to reach: *"Being digital is a sales argument for us"*.

Company D expresses that customers search for information differently today and that the different channels companies reach their customers through have changed due to digitalization. More opportunities exist today compared to before, newsletters and advertising through flyers were the only alternative. The digital channels have affected the firm's business and have become a positive way for them to reach a larger amount of people at their convenience. Company C explains that since they established a more modern e-commerce than just a website with basic information, they have been able to communicate with the customers in a whole different way. They can perform a dialogue with customers online and register every interaction with customers and also have directed channels to their customers that are not communicated to the end-consumers.

Company F explains that their digital channels consist of a website with every bit of information of their products as well as their company and they also have different channels in social media. They use digital channels to position themselves, not to sell their products online. However, many of their disruptive competitors have chosen to invest in digital channels such as an e-commerce, automated email offers that are based on the customer's internet behavior or automated coupons if the customer did not complete the purchase: *"Our competitors define their businesses as an e-commerce. [...] That is why we are trying to move our traditional business in the same direction, but how to do it is still unanswered"*. Their competitors argue that 97 percent of their customers do their purchase online in the same segments. The firm's competitors are new players on the market with modern business models and they have had digitalization and e-commerce in their business models from day one in comparison to company F.

"One of our competitors sends out 10 000 automated email offers a day based on what the customer clicked on their website. [...] Their customers are not interested in meeting a sales

person but ours are, which means that we cannot abandon the traditional way of conducting business.” – Process project manager, company F

5.3 Infrastructure

Company C believes that in order to deliver a result in a company and to have an efficient process, it is crucial that the whole organization is involved. It is the project manager’s responsibility and a challenge to gather all the roles that are necessary in a process such as establishing an e-commerce. Company A and B explains that the organization is changing because of the digitalization and that employees in the firms need competencies across departments than working in silos which is the traditional way to conduct business. Therefore, the organizational structure has to change. This is something that company D has realized as well and has started to describe digitalization in their roles and job descriptions in order to work more open and be adaptive to changes. *“In the future, a firm has to have a salesperson who understand the different systems and if you want to sell a concept that is about machine surveillance, you are not selling the product anymore.”* – E-business developer, company A

Company A continues to emphasize that since they got a new CEO three years ago, they have become more innovative than before. Even though this is a good thing and keep them in the frontline with technology and one step ahead of competition, it also creates chaos inside the organization. However, it is important that the customers are not affected by it. It has become more important than ever to have a strong leadership and strategies in order for everybody to understand in which direction they are going. Today the firm performs great things in some areas of the company and in some areas they perform less great things because they want to do everything and be as innovative as they can be: *“We have to start look at the bigger picture and lose the stuff that does not give any value to the company”*.

Company B states that they have not had a clear leadership over the years and that managers have often been replaced which have created chaos when making significant changes in the organization such as establishing an e-commerce. Their employees did not know which leader or which strategies to follow. Another challenge that traditional, manufacturing companies have is that new and disruptive players are taking over the market with a more modern view on organizational structure, explains company A. When these new companies enter the market, they already have a business model where digitalization has a central role in comparison to incumbent manufacturing firms. *This is the consequence with traditional organizations that have been around for a while, the entire organization has to rethink.*” – E-business developer, company A.

On the other side, company B and F say that even though people is talking about a huge change that is happening right now and that firms have to adapt both internally and externally, their traditional business is still continually going strong. Company A also believes that their brand is so strong that their traditional business is self-dependent. However, organizations today need to have different approaches to digitalization and to be flexible when it comes to changes in the environment (Company C). Company D explains that without their e-commerce, they would not have been as dominant on the European market as they are today. If they had not been so

flexible to changes and open to the possibilities that comes from digitalization, they would not have been in this position that they are today.

Company A identifies one of their biggest challenges, when becoming more digital through their e-commerce, as involving changing the way work procedures are conducted. There are always several new ideas that are brought forward, that in turn are very valuable. However, changing the business model involves changing their work practices and way of thinking. This in turn is where the challenge lies, to transform the people within the business. Transforming the business and its employees is not something that is done over night. The challenge is even greater for larger companies, such as company A, due to the fact that there are even more opinions and views to take into consideration. People are afraid of change and it can be hard to convince them to try something new. On the other hand, this type of change is necessary. Company F also explains that in a larger company it is important to keep all the pieces together and every move needs to be thought through. *"The hardest element of change is always the people."* – E-business developer, company A

Company B explains that the internal change has been and still is one of their biggest challenges. It is important to find a way to deal with changing the people within the company. A well developed strategy is needed in order to successfully transform the business. Transforming an already existing business to becoming more digitalized is a challenge that should not be underestimated. It is important to make sure employees understand their role in the change and do not feel forgotten. They need to feel that they have an important place in the future of the business, even though it might mean a few adjustments in their work. The firm experienced a strong resistance from their sales team when establishing an e-commerce. They felt that being able to book orders with the help of a computer would in turn replace their job. *"We were forced to try and explain what we wanted to accomplish internally and this is a challenge that has existed for many years."* – Process manager, company B

Company F explains that for them it is important to be able to prove that something will be profitable in order for the new idea to be approved. They do not have an e-commerce today, but believes that this type of investment would most likely be positively met from the organization. Everyone inside the organization needs to understand that the change is necessary. Company D explains that when it comes to change, the internal process always takes more time compared to the external process. Gaining acceptance internally is something that company D struggles with in their process to become more digitalized. A challenge has been to get everyone inside the organization to understand the importance of the Internet and how this can affect the entire business and way to go to market: *"The internal process always takes longer compared to the external process"*.

Company C explains that another challenge when it comes to establishing an e-commerce in business to business (B2B) is changing the culture that their customers are used to. The firm feels a concern over convincing customers to move away from the more traditional way of conducting business. Customers are used to receiving a more personal relation with the seller, where orders are made by calling in or by pen and paper together with the seller. Establishing

an e-commerce, where the order is placed with the help of a computer, removes this personal relation. Becoming more digitalized also requires customers to take on more responsibility. Company B also explains that it is a challenge for customers to apply this new way of placing orders and they experienced great external resistance in the beginning of their establishment of an e-commerce. However, they never forced their customers to use their e-commerce due to the fact that they do not want them to have a negative opinion about the company. Customers still have an option to place orders in the more traditional way if that is what they prefer. Company E believes that if they were to establish an e-commerce this could result in resistance from their customers. Their business model today is more complex where their product is integrated and sold together with other products. This creates several challenges for them if they were to establish an e-commerce. *"The hardest part of business to business (B2B) is changing the business culture that customers are used to."* – Chief Information Officer, company C

Company B explains that today 50 percent of their customers still call in to place orders instead of using their e-commerce. Customers are not willing to change the way they are used to conducting business, resulting in external resistance. Company C explains that they have had very long relationships with their customers, which also makes it challenging to convince them to change their behaviour. The firm also has about 50 percent of their customers that call in to place orders. For company C it is important that they are experienced as efficient and easy to deal with by the customer and their goal is for their customers to choose their e-commerce as a primary channel when integrating with them. Company D also explains that a challenge when establishing their e-commerce has been to get customers to actually use it to place orders instead of calling in. The firm has only been able to convince 50 percent of their customers to change behaviour. *"It is easy to create systems and become more digitalized, but the hard part is changing customer behaviour concerning work processes."* – Chief Information Officer, company C

Company A explains that their customers have been positive towards them establishing an e-commerce due to the fact that they can access information more easily and faster. The firm is always available, which is seen as positive from their customers' point of view. However, a challenge for the firm has been to prevent customers from having to do double work. Customers have their own systems and when company A established an e-commerce they had to place their orders in two different systems, which meant more work. The challenge is to integrate the customer's system with the firm's e-commerce. In order to handle this challenge, they need to become more automated. Company C explains that in order to get customers more positive towards changing behaviour they need to offer more services associated with using their e-commerce platform. The firm is trying to teach their customers that this is a more efficient alternative that provides them with better control over their business, the same goes for their suppliers. The firm needs to be the supplier's first choice and be experienced as easy to work with. Company C explains that many of their suppliers have been very positive towards them establishing their e-commerce. In order to deal with the external resistance from customers it is important to include them in the process early. They need to gain an understanding why this is useful. The firm also uses their e-commerce platform as a communication platform with their customers and this opens up even more channels. *"It is a change in customer behaviour that*

needs to take place. I believe that the road towards achieving this involves providing other aspects that attracts customers to the platform and motivates them to place their orders using this approach” – Chief Information Officer, company C

Company A stresses the fact that in order to succeed in transforming the business model and establishing an e-commerce it is important to motivate everyone inside the organization. Leadership becomes important. Top managers need to support the organization throughout the change by providing a clear strategy and motivating workers. Company C expresses that their top managers made digitalization a distinct part of their strategy from the beginning, which made it easier for the rest of the organization to understand the necessary change at hand when establishing an e-commerce. *”It is necessary to have support from top managers and a high level of motivation in order to roll out new ideas” – E-business developer, company A*

The majority of the respondents believe that digitalization is creating new challenges when it comes to obtaining suitable resources and knowledge. Company E expresses a concern over experiencing a lack of knowledge when it comes to dealing with digitalization. Digitalization is a wide concept that affects many different areas within a company, creating an even higher demand for the right type of resources. Digitalization does not only concern the actual product, but also plays an important role in divisions such as communication, software development and marketing. According to the firm it is important to identify what part within digitalization that is closest to the company in order to know what resources the company should focus on: *”In short term, digitalization is a jungle. There are a lot of buzzwords, thoughts and visions involved in the concept”.*

Company A explains that when taking on digitalization in the form of establishing an e-commerce, certain new challenges appear. Data concerning products becomes an essential part in an e-commerce. The firm has realized that one challenge for them is making sure that everyone in the company updates product information in the same way. It is therefore important to embrace competences within the company in order to prevent losing valuable knowledge. *”You could say that, when you begin using e-commerce solutions, company flaws become more obvious and in turn need to be dealt with.” – E-business developer, company A*

Company B explains that digitalization requires a wider knowledge base within the company. Today the type of questions that their customer service receives are much more advanced. Digitalization is affecting customer demand and the people working in the customer service department today need to have deeper knowledge concerning products. It is necessary for them to recruit people with the right type of knowledge in order to address the challenges that arise from digitalization. It is not enough to hire people who have experience within sales, they actually need to know the product. According to company F they are experiencing a shift in valuable resource areas within the company, where focus is no longer only on sales, instead knowledge within other areas are starting to take over. Company D also expresses that digitalization is changing the way work processes are conducted and thereby creating an increase in demand for other competences. This shift in required knowledge within a company due to digitalization is something that company E believes will affect service areas in particular.

A wider knowledge base is necessary in order to be able to give customers the expert advice that they are seeking. *"Customers today have completely different questions. They require a lot more knowledge"* – Process manager, company B

2 out of 6 companies explain that digitalization is creating a demand for new roles within the company. Company C points to the fact that an e-commerce needs to contain relevant and up to date information about products. This information needs to come from both the marketing and product development department. There is a need to establish a role that includes organizing product information updates. This role and competence is something that company C is currently trying to establish. Company D also explains that digitalization is creating new possibilities when it comes to linking different systems together. This in turn requires new competencies. The firm created a so called operating digital model where they identified which roles are required in order to handle digital challenges in the future. This resulted in several new knowledge requirements. E-commerce is an important part of their company today and another role that therefore has gained importance is supporting partners when selling the firm's products. It is important to make sure that these partners are provided with the right content and information concerning products. *"This is a completely different area today. So what we have done is that we have looked into how we can develop our organization."* – Global Digital Director, company D

Company D explains how digitalization requires more knowledge within the company, however it is a challenge to find the right competence. Finding people with the right knowledge is becoming even harder as digitization continues to evolve. Company A stresses the fact that today most industries are looking for digital competence, resulting in that the available competence on the market is becoming scarce. Company D points to the fact that the right competence is needed both on the business side as well as the IT side. The challenge lies in finding this digital competence. The firm applies best practice when it comes to hiring new employees that obtain digital knowledge. They also push their employees to attend various courses in order to enhance their digital knowledge. Company B on the other hand, feels that they have had the competence needed within the company, but due to the fast pace of digital development, it can in some cases be hard to keep up. The challenge then is to define what competence is required in relation to their evolving business. *"It is hard to go from not being digital to becoming digital. It is a challenging process."* – Global Digital Director, company D

Company D explains that digital transformation is equal to big changes, that in turn lead to large expenses. In other words, becoming digital costs money. According to company E, obtaining the right resources is one of their greatest challenges. Larger organisations might have an easier time providing the right resources and the power to invest in becoming more digital. Due to being a smaller company with less resources, company E explains that they need to identify the most important areas to invest their resources in. Company A on the other hand, explains that for them being a larger company, one of the biggest concerns is receiving funding for a certain project. There are many projects being carried out that require resources in the form of funding and only some of them that actually are approved. Company D also explains that one of their biggest frustration concerning digitalization and establishing an e-commerce

is receiving funding internally. It is a challenge when it comes to convincing the entire organization that becoming more digital is something worth investing in. In other words, in order to get funding everyone within the organization needs to understand the value of the investment: *"One challenge is to receive funding, money internally"*.

Company B expresses a challenge concerning obtaining the right resources in the form of IT tools. The company is in the middle of the process of changing platforms. This is a technical change that is very complex. Changing platforms requires reprogramming certain functions that are wanted by customers. Due to this, the firm needs to have two platforms. This shift from only having one ERP-system to actually having several platforms thereby creates several concerns. Company C also explains that one increasing challenge for them is that customers are demanding more and more information digitally. Product data has gained an important role. The firm is required to invest a lot of time in putting together different documents to suit their customers' demand. This is very time consuming due to the fact that customers have different demands concerning how they would like the documents to be structured. One is therefore developing functionality in their database, in order to make it possible to make customized export flows. The firm therefore needs to create a platform that can provide this functionality. *"An issue today, that is becoming increasingly important, is questions concerning different systems."* – Process Manager, company B

6. Discussion

6.1 Offering

Value proposition: Product vs service

Osterwalder and Pigneur (2010) as well as O'Neill (2015) argue that the value proposition constitutes the products or services that a company are offering to a customer segment. The value proposition is a crucial dimension in the business model because it determines why the customers choose a company over another and explains what value the firm offers its customers. Furthermore, companies are getting more interested in adding services to their traditional products in order to remain competitive and develop a long-term growth in their industries (Jacob & Ulaga, 2008). In agreement with Jacob and Ulaga (2008), company B implies that due to an increased competition and digitalization, companies are focusing more on offering value-added services to their products than before. Company D argues that the existing market is demanding both an optimal product and optimal service which has lead to companies adapting to more services than their traditional products. In 4 out of 6 companies, digitalization has become a large part of their business models and since they started working continuously with digitalization, they have started offering services to their customers.

All companies included in the study felt that they needed to focus more on value-added services than their traditional product and offered their traditional product as an overall solution with value-added services such as selling uptime and education and sold it as a concept. However, 4 out of 6 companies worked with services more than the others. Company D argues that the traditional product as a stand alone-product will be less valuable in the future and that it is how the firm package the products that will differ. This approach is aligned with Company A's opinion about customers that are not paying for the product anymore but for the overall solution. It can be implied that the companies are getting more aware of the management of the contradicting strategies in their value proposition. There are a lot of business opportunities when companies start focusing on the services than the product (Jacob & Ulaga, 2008). Company B implies that is more important now to have the required knowledge and understanding of which products are valuable apart from other companies' offerings. In contradiction to these companies, company F will continue to sell their traditional product because a modification in their value proposition and how they present their products, will do more harm than good to their strong company brand. Even though they want to adapt to digitalization, they are convinced that it will affect their current relationships as well as encounter resistance inside the organization. Nevertheless, customer expectations and the fast-paced environment are two factors that companies need to take into consideration because they will only continue to increase and it will be more difficult to change the organization later on when there are more challenges to encounter. The size of the organization does also matter and in company A's and F's cases, changes take time and especially when they are an international company where changes affect several countries. The majority of the companies have managed the contradiction concerning the firm's value proposition by adding services to their original product instead of choosing one over another.

Revenue streams: Core vs complement

Osterwalder and Pigneur (2010) believes that every company has to create value for the customer in order to attract them which in turn continues them to pay for the product or service which leads to a revenue stream for the organization. A company can divide its offerings into two categories: core innovation and complementary products (West & Gallagher, 2006). This can be compared to if a company wants one or several revenue streams where focusing on the core innovation generate a single revenue stream which is the traditional way of conducting business. Complementary products can be compared to a firm who wants to generate several revenue streams which is the contradicting strategy to the traditional way. The approach to invest in several revenue streams are adopted by all of the companies involved in the study. 2 out of 6 companies are more hesitant to it because they do not now how their customers will react to it. These two companies have started to offer smaller value-added services such as establishing a more informative website and the desire to establish a chat with customers in the nearest future. However, these two companies felt that their traditional product as their core innovation is their key competence and is what their strong relationships with customers are based on. They do also not want to risk decreasing the economic value of the product or the objective value for the firm as Chesbrough (2010) implies is a consequence when exploring new business models and strategies.

In contradiction to Chesbrough (2010), West and Gallagher (2006) emphasize that a firm does not have to choose which revenue stream to focus on because a firm can achieve economic value through offering the core innovation along with complementary products in order to offer customers an overall solution. Consequently, it can be difficult to find the right balance between offering both the core innovation and complementary products to customers (Wareham et al., 2014). The main concern with this approach is to be able to convince the customers that this will increase the value for them rather than decreasing it. This concern can be identified in all of 6 companies and they found it difficult to communicate the change to their customers. On the contrary, company C has turned their e-commerce into a communicative platform through innovating their business model where they communicate changes to their customers or encounter dissatisfaction from customers. This can be aligned with Amit and Zott (2012) who argue for business model innovation as an enabler for creating additional value to the organization and exploiting new opportunities which can be carried out to a new revenue stream. In company C's case, it is their e-commerce that has become a new revenue stream which is agreed with Sinha and Singh (2016) who believe that e-commerce is a form of business model innovation.

Company B argues for the importance to be updated on which products that are more exposed to transparency and find other revenue streams to charge the customers which is something they have applied in their firm. All of the companies that are involved in this study believe that transparency is increasing in every industry and it is because of the digitalization. Company F implies that because companies are moving their businesses online and because people as consumers, in their private life, are so used to having every bit of information available on the internet, the market is so transparent. However, company D argue that they are not affected by the transparency but they have to defend their prices on products differently than they used to

do. It can be implied that the transparency becomes a valid reason for the need to have several revenue streams in order to maintain a long-term growth. The majority of the companies in this study have acknowledged the concern to lose competitive advantage and therefore invested in more than one revenue stream in order to become more adaptive to changes.

Cost structure: Manual vs automation

In agreement with Scheer et al. (2004), company A advocates that through automated processes and innovation, companies can create sustainable activities whilst achieve efficiency. Scheer et al. (2004) imply that an efficient way to reduce costs is through information systems that support the business processes. This is an approach that is adopted by company A who established an e-commerce with the single purpose to reduce manual costs over time and replace the human errors whilst increasing efficiency for both customers and the employees within the firm. On the contrary, company E states that an e-commerce could be beneficial for them but they do not want to lose the control that they have today. This has had an impact on company E's choice to not establish an e-commerce yet. In accordance with Scheer et al. (2004), company D wanted to be one step ahead of competition with their e-commerce whilst company B and C wanted to get closer to their customer and decrease the number of customer visits they do. This implies that manual processes are often associated with unnecessary costs such as time and effort and that 4 out of 6 companies want to become more efficient with their time. However, not listen to the customers' needs, could be a valid reason why 50 percent each of company B and C's customers still calls when placing an order instead of using their e-commerce. This could be a consequence of the industry being more traditional than others and that their customers are not as willing to adapt to changes. The majority of the companies have automated certain work processes with the help of their e-commerce but there is still a hesitance among manufacturing companies of losing control.

6.2 Customers

Customer segments: Intermediaries vs end-customer/Customer relationships: Maintain existing relations vs exploit new opportunities

Osterwalder and Pigneur (2010) describe one important aspect of a business model as involving the channels that the firm uses in order to communicate with customers and partners. This communication is in turn enabled through distribution, sales or communication channels and it is important to provide a combination of channels that satisfies the customer's needs (O'Neill, 2015). These channels can be owned by the company or be provided through partners such as retail stores or web sites. Regardless, a firm may experience several challenges concerning finding suitable distribution, sales and/or communication channels when innovating their business model (Christensen & Raynor, 2003). This can be compared to company F who have not established an e-commerce and value having a more personal relationship with the customer, where they have the opportunity to come and examine the product. On the other hand, company F is determined that if they were to establish an e-commerce they might be able to take on a new customer segment that they do not attract today due to their choice of communication channels. The main concern for company F is finding a way to balance the traditional communication channels with the new opportunities provided by establishing an e-commerce. In other words, company F need to find a way to manage this contradiction by

satisfying customers who require a more personal relationship, as well as attract new customers that are interested in communicating through more digital channels. Nevertheless, Osterwalder and Pigneur (2010) describe customer relationships as an important part of maintaining customer segments. A company is required to establish a type of relationship that is suitable with each of their customer segments in order to retain customers as well as acquire new ones. However, Christensen and Raynor (2003) argue that innovating a firm's business model can in turn eliminate existing relationships with customers and partners. This becomes clear as company F feels that there is a risk with changing their business model when it comes to maintaining relationships with their intermediaries as they are keen on maintaining the existing communication channels. These intermediaries have a very central role in company F's business model due to the type of products that they sell, which makes this relationship very valuable for the success of the business. Thus, the contradiction between obtaining traditional more personal communication channels and developing new ones is a necessary challenge to address when exploring the possibilities of establishing an e-commerce.

Gambardella and McGahan (2010) underline that a business model should reflect what customers want, how they want it as well as how an organization can best meet those needs. This approach is to a certain degree adopted by Company F and A who are very customer centric in their business today and keen on providing products that fulfill their customers' needs. A challenge is also maintaining a good relationship with suppliers during a change in order to not lose them to competitors. Consequently, Christensen and Raynor (2003) argue that a new business model can eliminate the existing relationships with key suppliers and partners. This is something that worries companies and prevent them from developing their businesses further. Furthermore, key partnerships can be referred to as a network with different external actors that collaborate in order to stay competitive in the business landscape. A challenge is therefore identifying the best ways to capture value in the network, creating appropriate protection methods as well as selecting suitable actors to collaborate with (Iansti & Levien, 2004). A contradiction that company F is faced with is finding a balance between listening to their customers wishes concerning ways to integrate with them and at the same time testing new solutions.

Digitalization is providing companies with several new actors in their customer segments. This can be reflected in company A and how their traditional way of conducting business is changing. Thus, business model innovation is an enabler for creating additional value to the organization that can lead to identifying new markets or exploiting new opportunities in markets that the firm has already established (Amit & Zott, 2012). Nevertheless, Sinha and Singh (2016) argue that e-commerce is an example of how business model innovation has lead to new market opportunities beyond regional and geographical barriers. On the other hand, it is difficult to predict how a company or its customers will react to a new business model (Chesbrough, 2007). This can be reflected in company A, where a concern is controlling how establishing an e-commerce will affect intermediaries if customers choose to buy their products online. This type of disruptive change of how to conduct business makes it necessary for manufacturing firms such as company A to find a way to manage relationships with their current distributors and at the same time explore the possibilities with establishing an e-commerce and selling their

products directly to customers. In order to overcome this contradiction, different business strategies may need to be established in different customer segments depending on how far customers have come within digitalization. This implies dealing with different levels of digitalization and finding a solution that satisfies all actors involved.

Channels: Offline vs online

Osterwalder and Pigneur (2010) argue that channels are a dimension in the business model which entails the different channels which the firm uses to communicate to their customers. Channels give a company an opportunity to maintain the relationships with their customers and can be used for promoting products and services or customer support (O'Neill, 2015). Company D implies that how companies reach their customers today, has changed because of the digitalization and that the traditional channels such as newsletters and advertising through flyers, have been replaced by digital channels through technological innovation. Shankar et al. (2003) argue that managers are concerned that customer satisfaction and loyalty will decrease when conducting business through online channels. 2 out of 6 companies confirm this concern and even though they use a few online channels to position themselves because of the tough competition, they prefer their traditional, offline channels. This can indicate that companies such as these two respondents are afraid of losing the personal connection they get when meeting their customers in real life if they were to adapt to digital channels. These two companies have managed this contradicting strategy by not establishing an e-commerce. However, company C and D argues that the online channels have been a successful approach for them to reach out to their customers. Company C believes that an e-commerce has facilitated the communication to their customers and given them the possibility to analyze the customer behaviour to their convenience, which is aligned with Srinivasan et al. (2002). In addition, all of the respondents used online channels to either reach out to customers or position themselves which can indicate that finding a balance between offline and online channels, may not be a preferred choice but necessary in order to stay competitive.

6.3 Infrastructure

Key activities: Hierarchy vs network

Bossen and Ingemansson (2016) argue that established manufacturing firms are required to be flexible and open to change if they wish to compete with startups and competitors in a more modern way of conducting business. However, Iansti and Levien (2004) and Kaldis et al. (2007) emphasize that is not enough to only be open to change. Companies also need to transform the traditional organizational structures in order to adapt to a more modernized business landscape. This approach is to a certain degree adopted by the majority of the respondents who have started to modernize work processes and become more open to change. However, they still act from a hierarchical organizational structure in comparison to disruptive players who act more network-based. In order to work more network-based, companies need to open the organization internally and employees need to be able to work across boundaries in order to become more innovative (Kaldis et al., 2007). The majority of the respondents in this study were well aware of the fact that their organizational structures need to change and that in the future, competencies are required over multiple areas in the firm. However, 3 out of 6 respondents argue that their traditional brand is too strong and self-dependent to be affected by the changes

in the environment. It is therefore necessary for firms to gain the understanding that they need to manage these contradicting strategies concerning having a hierarchy vs having a network structure. The challenge is finding a balance between these two contradicting structures in order to support key activities when establishing an e-commerce.

Bossen and Ingemansson (2016) state that in order for incumbent manufacturing firms to stay competitive, they are required to innovate traditional activities and find new methods to operate on a regular basis. Regardless, it is a challenge to align with the pace of change in the digital economy, without destroying existing fundamental business development practices. Establishing an e-commerce has had a positive effect internally for company A when it comes to not having to invest time in performing unnecessary work. Thus an e-commerce platform has resulted in more automated work and made it possible to minimize most of the manual work within the company. Simultaneously, Company F does not have an e-commerce today, but believes that this type of investment would most likely be positively met internally. On the other hand, 3 out of 6 respondents are struggling with gaining acceptance internally regarding the e-commerce platform and becoming more digital. The internal process always takes more time compared to the external process. A challenge is changing the way work procedures are conducted. The contradiction in this case is moving away from the traditional work procedures where orders were placed manually and replacing it with more automated work. New roles are required and employees working within sales are required to adapt to new responsibilities, creating resistance that needs to be dealt with. According to company A, changing the business model also involves changing work practices and way of thinking, which is something that Bossen and Ingemansson (2016) identify as necessary. This in turn is where the challenge lies, to transform the people within the business. The challenge is even greater for larger companies, due to the fact that there are even more opinions and views to take into consideration. A well developed strategy is needed in order to successfully transform the business. One respondent argues that it is important to make sure employees understand their role in the change and feel that they have an important place in the future of the business, even though it might mean a few adjustments in their work. The contradiction that needs to be managed involves getting employees to move away from the traditional way of doing business and accepting the new possibilities and roles created through e-commerce.

Bossen and Ingemansson (2016) argue that digitalization is creating new possibilities regarding product development and customer relationships within the manufacturing industry. One respondent expressed a concern when it comes to changing the culture that customers are used to in order to align the business with the e-commerce platform. Customers are used to receiving a more personal relation with the seller, where orders are made by calling in or by pen and paper together with the seller. Establishing an e-commerce, where the order is made with the help of a computer, removes this personal relation. The contradiction at hand becomes managing to get customers to move away from the more traditional way of doing business and accepting the new possibilities created through e-commerce. Nevertheless, Bossen and Ingemansson (2016) argue that companies need to innovate their traditional business and adjust to the digital economy without destroying existing fundamental business development practices. The challenge is to find a way to align these two predicaments without losing customers' trust and

the relationships as well as trying to convince the customers that innovating the businesses is a must. Thus, one respondent explains that the challenge is to manage the external resistance that customers express towards this new way of placing orders with the help of an e-commerce. Consequently, Company E believes that if they were to establish an e-commerce this could result in resistance from their customers due to the fact that their business model today is more complex where their product is integrated and sold together with other products. On the other hand, O'Neill (2015) as well as Osterwalder and Pigneur (2010) argue that key activities are an essential part of the business model and constitutes the work that a firm does in order for the business model to function. The purpose with the key activities is to create value and offer a value proposition, to maintain customer relationships, to reach markets and increase the revenues. Nevertheless, Company C explains that they have had very long relationships with their customers, which also makes it challenging to convince them to change their behaviour. Furthermore, Bucherer et al. (2012) argue that business model innovation is critical for a company's success in a long-term perspective but it is still a subject that faces resistance among organizations. Thus, Company C points to the fact that in order to deal with the external resistance from customers it is important to include them in the process early. They need to gain an understanding why this is useful. Company C also uses their e-commerce platform as a communication platform with their customers and open up even more channels for customers to reach them.

Chesbrough (2007) emphasizes the importance of having a good leadership when performing business model innovation. Unfortunately, companies often have an absence in leaders that have the authority or the capability to push through a transition of that size. Simultaneously, Company A and B stresses the fact that in order to succeed in transforming the business model and establishing an e-commerce it is important to have good leadership. Top managers need to support the organization throughout the change by providing a clear strategy and motivating workers. This approach was to a certain degree adopted by company C where top managers made digitalization a distinct part of their strategy from the beginning, which made it easier for the rest of the organization to understand the necessary change at hand when establishing an e-commerce. Company B on the other hand, has had multiple CEOs over the years, which has caused internal chaos among employees. This is not something that a company should strive for during a transformation as big as establishing an e-commerce in order to avoid resistance. In other words, a strong leadership and clear strategies are essential during a transformation in order to manage contradictions between traditional and new business development practices in a firm's key activities.

Key resources: Internal vs external/Key partners: Strong ties vs loose coupling

Osterwalder and Pigneur (2010) underline key resources as one building block in a business model. Resources in a company can in turn be divided into four categories: physical (buildings, machines etc.), intellectual (brands, customer databases, knowledge etc.), financial (money) and human (people). The majority of the respondents argue that digitalization is creating new concerns when it comes to obtaining suitable resources within these categories. In addition, company E expresses a concern over experiencing a lack of knowledge concerning digitalization and how to best approach it. Osterwalder and Pigneur (2010) explain that one

valuable key resource in a company is human assets in the form of people and their competence. The fast pace of digitalization and new trends such as e-commerce are in turn creating obstacles for manufacturing companies that are required to widen their knowledge base in order to successfully adapt. Furthermore, Chesbrough (2007) argues that incumbent firms need to acquire the right type of knowledge and capabilities in order to be able to address the challenges associated with digitalization. This becomes even more clear as company E explains how digitalization is a wide concept that affects many areas within a company. It is therefore important to identify what areas concerning digitalization that are most crucial for the company to invest resources in. Osterwalder and Pigneur (2010) explain that suitable assets are essential for a firm in order for their business model to function.

Osterwalder and Pigneur (2010) point to the fact that resources that are acquired to deal with new opportunities created by digitalization do not necessarily have to come from inside the company itself. New competences or other valuable assets can in turn be owned by key partners. Consequently, company A explains that when they began using e-commerce solutions they were faced with several new obstacles where it became important for them to embrace competences within the company in order to prevent losing valuable knowledge. Company flaws in this way became more obvious underlining the areas that lacked resources internally. Furthermore, Wareham et al. (2014) argue that one way to access a larger knowledge base is to collaborate with other actors in an ecosystem. The majority of the respondents express that e-commerce has created a demand for new roles within the company. E-commerce is changing the way work processes are conducted and employees working within sales are required to obtain a wider knowledge base compared to before. New roles that include knowledge concerning several different areas within the company need to be established. Company D describes supporting partners with the right information concerning products as an example of a role that is of great importance for the success of the e-commerce. In addition, Wareham et al. (2014) argues that in an industrial ecosystem, actors often work together to deliver a product or service to the customer. This implies that actors in the ecosystem need to work together in assembling different capabilities and knowledge in order to create effective solutions for customers. In other words, it is important for an ecosystem to have a portfolio of reusable knowledge that everyone in the ecosystem can benefit from. Accordingly, company B explains that in order to address the concerns associated with establishing an e-commerce, it is necessary for them to recruit people externally who obtain this competence. On the other hand, three out of six companies explain that finding people with the right competence is becoming even harder as digitalization continues to evolve. 2 out of 6 respondents point to the fact that the right competence is needed both on the business side as well as the IT side. The challenge therefore lies in finding people who possess knowledge within both areas as well as educating existing employees within both areas. The contradiction at hand, that needs to be managed by manufacturing firms when establishing an e-commerce is finding a balance between obtaining internal and external resources.

Apart from human assets, Osterwalder and Pigneur (2010) refer to financial assets and physical assets as an important part of a company's key resources. These type of resources are in turn essential in order for a company's business model to function. Furthermore, company D

explains that digital transformation in the form of establishing an e-commerce is equal to large expenses. In other words, becoming digital costs money. Nevertheless, one respondent describes one of their largest challenges concerning digitalization and establishing an e-commerce is convincing the entire organization that becoming more digital is something worth investing in. Thus, receiving funding internally becomes an important part of acquiring suitable resources in order to deal with the opportunities that arise with digitalization. In addition, Osterwalder and Pigneur (2010) also mention physical assets in the form of buildings, machines or manufacturing facilities as an essential part of a company's business model. Physical assets are something that company B experienced a lack of. They had a difficult time obtaining the right resources in the form of IT tools. Establishing an e-commerce platform requires more complex technological solutions. Data concerning products is also something that requires more attention and one challenge can be developing the functionality of the company's database in order to be able to create customized export flows, as can be seen in company C. The concern in this case is replacing the existing platform with a new platform that can provide this type of functionality in order to solve these issues necessary for the e-commerce solution to work. Different companies may require different platform solutions depending on their needs. This implies that manufacturing firms may need to abandon old technology and replace with newer, more complex solutions or make sure that their existing systems can be integrated with their customers' systems.

According to company E, being a smaller company, obtaining the right resources is one of their greatest concerns. Larger organisations might have an easier time providing the right resources and the power to invest in becoming more digital. Company A on the other hand, explains that for them being a larger company, one of the biggest concerns is receiving funding for a certain project. In a larger organization there are many new ideas and projects in the loop and convincing managers to invest in a specific project can be difficult. Furthermore, the size of the manufacturing company may be an obstacle when it comes to obtaining the resources required when establishing an e-commerce. This is something that needs to be taken in to concern when managing contradicting strategies in business model innovation.

6.4 Establishing an e-commerce in the manufacturing industry

To begin with, manufacturing companies need to know themselves and identify their needs in order to become more digital and know what possibilities that exist. After this has been concluded, they need to identify which dimensions of their business model that the majority of their resources needs to be assigned to. Our altered version of the Business Model Canvas is a suitable framework for capturing relevant dimensions of the business model that become important when establishing an e-commerce. However, since certain factors such as size of the firm and differentiation in advanced products create obstacles for manufacturing firms, the process of dealing with different contradictions in relation to innovating a firm's business model, needs to be adapted to suit the characteristics of a particular manufacturing firm. The different dimensions of a business model can have varied importance for different types of manufacturing firms when establishing an e-commerce. Since digitalization is starting to gain an important role within the manufacturing industry, it is possible that we might see an even greater shift and adaptation within manufacturing firms in the future, where e-commerce

becomes a natural part of their business model. The main goal for manufacturing firms is to stay competitive by finding a way to balance contradicting strategies caused by digitalization without destroying existing fundamental business development practices. In order to do so it is important to develop the business model and find new solutions as well as manage contradictions that arise between their traditional way of conducting business and the new possibilities that arise concerning offering, customers and infrastructure.

7. Conclusion

The fast pace of digitalization has changed the premises for the manufacturing industry, resulting in that their traditional business models no longer are viable. New trends such as e-commerce are reformulating how traditional industries conduct their business. In order to realize the business potential in digitalization, manufacturing firms need to develop their capability for dealing with contradictions between traditional strategies and the new opportunities that arise from digitalization. One way to do this is through innovating a firm's business model. The majority of the companies included in the study managed contradictions by finding a balance between the traditional and the innovative way of conducting business, instead of choosing one strategy over the other. From our observations, in order for a manufacturing company to successfully manage contradicting strategies when exploring new business models within e-commerce, they need to identify which dimensions of their business model that the majority of their resources needs to be assigned to. Our altered version of the Business Model Canvas is a suitable framework for capturing relevant contradicting strategies within the different dimensions of a business model that become important when exploring new ways of conducting business in the form of establishing an e-commerce. The primary contradicting strategies that a company must manage based on our observations include *product vs service*, *internal vs external* and *maintain existing relations vs exploit new opportunities*. Finding a balance between product vs service is essential as it constitutes what a company offers their customers. Finding a balance between internal vs external resources is essential in order for a company to be able to conduct their business in relation to the value proposition. Finding a balance between maintaining existing relations vs exploiting new opportunities is of importance because these relations make up the economic and objective value of the firm. When a company has managed the contradictions between traditional strategies and new innovation practices in each of these three dimensions of a business model, we believe that it will create a solid foundation for managing contradictions in the remaining six dimensions.

7.1 Future research

This study has examined the contradicting strategies that manufacturing companies face when exploring new business models in the form of establishing an e-commerce. This study is limited to only involving six different manufacturing companies with different types of products. Therefore, a suggestion concerning future research could be to conduct this study on a larger number of companies with different types of product in order to get a deeper understanding for the challenges with business model innovation. Conducting this study on a larger number of companies, could also help create a better understanding for how certain factors such as size of organization and type of product affect the contradictions that appear. Furthermore, an interesting aspect would be to apply our contradicting strategies to other types of business model innovations, other than e-commerce, in order to compare if the same types of contradictions are accurate in other situations as well.

References

- Ahrne, G. & Svensson, P. (2011). *Handbok i kvalitativa metoder*. 1st edition, Stockholm: Liber AB.
- Amit, R. & Zott, C. (2012). Creating value through business model innovation. *MIT Sloan Management Review*, 53, pp. 41-49.
- Backman, Y., Gardelli, T., Gardelli, V., Persson, A. (2012). *Vetenskapliga tankeverktyg - till grund för akademiska studie*. 1st edition, Lund: Studentlitteratur AB.
- Bossen, H. & Ingemansson, J. (2016). *Digitalisering av svensk industri: kartläggning av svenska styrkor och utmaningar*. Germany: Roland Berger AB.
<http://www.vinnova.se/upload/EPiStorePDF/Digitalisering%20av%20svensk%20industri.pdf>
- Braun, V. & Clarke, V. (2017). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, pp. 77-101.
- Bucherer, E., Eisert, U., Gassman, O. (2012). Towards systematic business model innovation: lessons from product innovation management. *Creativity and Innovation Management*, 21, pp. 183-198.
- Casadesus-Masanel, R. & Zhu, F. (2013). Business model innovation and competitive imitation: the case of sponsor-based business models. *Strategic Management Journal*, 34, pp. 464–482.
- Chesbrough, H. (2007). Business model innovation: it's just not about technology anymore. *Strategy and Leadership* or *Emerald Group Publishing*, 35, pp. 12-17.
- Chesbrough, H. (2010). Business model innovation: opportunities and barriers. *Long Range Planning*, 43, pp. 354-363.
- Chesbrough, H. & Rosenbloom, S. R. (2002). The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies. *Industrial and Corporate Change*, 11(3), pp. 529–555.
- Christensen, C. & Raynor, M. (2003). *The Innovator's Solution: creating and sustaining a successful growth*. 1st edition, Boston, MA: Harvard Business School.
- Damberg, M., Brogren, C., Söderström, J., Aaro, L-E., Mazur, S., Moström, J. (2015). *Svensk industri ska leda den digitala revolutionen*. <http://www.nyteknik.se/opinion/svensk-industri-ska-leda-den-digitala-revolutionen-6392986> [2017-01-24].
- Danneels, E. (2003). Tight-loose coupling with customers: The enactment of customer orientation. *Strategic Management Journal*, 24, pp. 559-576.

Desyllas, P. & Sako, M. (2013). Profiting from business model innovation. *Research Policy*, 42, pp. 101-116.

Eisenhardt, K. M (1989). Building theories from case study research. *Academy of Management Review*, 14(4), pp. 532-550.

Eisenmann, T., Parker, G., Van Alstyne, M.W. (2006). Strategies for two-sided markets. *Harvard Business Review*, pp. 92-101.

Gambardella, A. & McGahan, M. A. (2010). Business-Model Innovation: General Purpose Technologies and their Implications for Industry Structure. *Long Range Planning*, 43, pp. 262-271.

Hagberg, J., Sundstrom M., Egels-Zandén, N. (2016). The digitalization of retailing: an exploratory framework. *International Journal of Retail & Distribution Management*, 44, pp. 694-712.

http://www.hui.se/MediaBinaryLoader.axd?MediaArchive_FileID=d12a8c0b-fbc9-445b-93d1-2d6ba228114a&FileName=E-barometern+Q3+2016.pdf&MediaArchive_ForceDownload=True&Time_Stamp=636227710004568681 [2016-02-15].

Iansti, M. & Levien, R. (2004). Strategy as Ecology. *Harvard Business Review*, 82, pp. 68-81.

Jacob, F. & Ulaga, W. (2008). The transition from product to service in business markets: an agenda for academic inquiry. *Industrial Market Management*, 37, pp. 247-253.

Kaldis, E., Koukoravas, K., Tjortjjs, C. (2007). Reengineering academic teams toward a network organizational structure. *Journal of Innovative Education*, 5, pp. 245-266.

Kane, G. C., Palmer, D., Nguyen Phillips, A., Kiron, D. (2015). Is your business ready for a digital future? *MIT Sloan Management Review*, 56, pp. 36-44.

Martins, L. L., Rindova, V. P., Greenbaum, B. E. (2015). Unlocking the hidden value of concepts: a cognitive approach to business model innovation. *Strategic Entrepreneurship Journal*, 9, pp. 99-117.

Mathiassen, L., Chiasson, M., Germonprez, M. (2012). Style composition in action research publication. *MIS Quarterly*, 36, pp. 347-363.

O'Neill, T. W. (2015). The business model canvas as a platform for business information literacy instruction. *Reference Services Review*, 43, pp. 450-460.

- Osterwalder, A. & Pigneur, Y. (2010). *Business model generation: a handbook for visionaries, game changers and challengers* [e-book collection]. 1st edition, Hoboken: John Wiley & Sons.
- Patel, R. & Davidson, B. (2011). *Forskningsmetodikens grunder: att planera, genomföra och rapportera en undersökning*. 4. uppl., Lund: Studentlitteratur AB.
- Preece, J., Rogers, Y. & Sharp, H. (2011). *Interaction Design: beyond human-computer interaction*. 3.uppl., Chichester: John Wiley & Sons Ltd.
- Scheer, A-W., Abolhassan, F., Jost, W., Kirchmer, M. (2004). *Business process automation* [e-book collection]. 1st edition, Berlin: Springer.
- Schneckenberg, D., Velamuri, V. K., Comberg, C., Spieth, P. (2016). Business model innovation and decision making: uncovering mechanisms for coping with uncertainty. *R&D Management*, pp. 1-16.
- Selander, L., Henfridsson, O. & Svahn, F. (2013) Capability search and redeem across digital ecosystems. *Journal of Information Technology*, 28, pp. 183-197.
- Shafer, S. M., Smith, H. J., Linder, J. C. (2005). The power of business models. *Business Horizons*, 48, pp. 199-207.
- Shankar, V., Smith, A. K., Rangaswamy, A. (2003). Customer satisfaction and loyalty in online and offline environments. *International Journal of Research in Marketing*, 20(2), pp. 153-175.
- Sinha, P & Singh, S. (2016). E-commerce embracement by micro, small and medium enterprises - expediting the economic development. *International Journal of Economic Research*, 13, pp. 1-6.
- Spieth, P., Schneckenberg, D., Ricart, J. E. (2014). Business model innovation - state of the art and future challenges for the field. *R&D Management*, 44, pp. 237-247.
- Srinivasan, S. S., Anderson, R., Ponnaveolu, K. (2002). Customer loyalty in e-commerce: an exploration of its antecedents and consequences. *Journal of Retailing*, 78 (1), pp. 41-50.
- Teece, D. J. (2009). Business models, business strategy and innovation. *Long Range Planning*, 43, pp. 172-194.
- Trost, J & Hultåker, O. (2016). *Enkätboken*. 2:a upplagan, Lund: Studentlitteratur AB.
- Yin, R. K. (2011). *Qualitative research from start to finish*. 1st edition, New York: The Guilford Press.

Yoo, Y. (2013). The table has turned: How can the information systems field contribute to technology and innovation management research? *Journal of the Association for information systems*, 14, pp. 227-236.

Wareham, J., Fox, P. B., Cano Giner, J. L. (2014). Technology ecosystem governance. *Organization Science*, pp. 1-21.

West, J. & Gallagher, S. (2006). Challenges of open innovation: the paradox of firm investment in open-source software. *R&D Management*, 36, pp. 319-331.

World Economic Forum. (2016). Digital Transformation of Industries Demystifying Digital and Securing \$100 Trillion for Society and Industry by 2025. World Economic Forum [forum], 20th of January. <http://reports.weforum.org/digital-transformation/wp-content/blogs.dir/94/mp/files/pages/files/wef1601-digitaltransformation-200116.pdf> [2017-02-05].

Zimmermann, H-D. (2000). Understanding the Digital Economy: Challenges for new Business Models. *AMCIS 2000 Proceedings*. Paper 402. <http://dx.doi.org/10.2139/ssrn.2566095>

Appendix 1

Intervjuguide

Frågeställning: *How do manufacturing firms manage contradicting strategies when exploring new business models?*

Beskrivning:

Namn:

Befattning:

- Hur länge har ni haft en e-handelsplattform/haft en affärsmodellsinnovation?
- Vad ville ni åstadkomma med en e-handelsplattform?
- Hur upplevde ni beslutet av en e-handelsplattform (affärsmodellsinnovation) innan ni implementerade och efteråt? Vad var den största förändringen?
- Hur upplevde ni processen?

Utmaningar









- Hur har er **positionering på marknaden** förändrats sedan ni etablerade en e-handelsplattform?
- **Kundsegment** (dvs vilka kunder ni har)
- **Värdeerbjudande** (det ni erbjuder/lovar kunden som är unikt från konkurrenter)
- **Produkter ändrats** (erbjudande till kund)
- **Konkurrensfördelar**
- **Arbetsätt**
- **Intäkter** påverkats? ökat/sänkts
- **Tillgångar/resurser** - i form av efterfrågan av kompetens, kapital, IT-verktyg
- **Försäljningskanaler**
- Hur har era **prissättningsstrategier** förändrats sen ni etablerade en e-handelsplattform?
- Hur hanterar ni era **relationer** med leverantörer och kunder vid en förändring i er verksamhet?

- Vad har varit era utmaningar när ni etablerade en e-handelsplattform? Största utmaningen?
- Hur har ni gått tillväga för att hantera nya möjligheter med till exempel digitaliseringen utan att förlora er kärnverksamhet och traditionella strategier? Vad har utmaningarna varit?

Affärsmodeller

- Vad är din definition av en affärsmodell?
- Vad anser du är syftet med en affärsmodell?
- Hur viktig tycker du att en affärsmodell är för företaget?
- Hur mycket resurser lägger ni på er affärsmodell?
- Hur ser du/ni på att ändra sin affärsmodell? Bra/dålig
- Har er affärsmodell genomgått en stor innovation?

Appendix 2

<p><i>Key Partners</i> </p> <p>Strong ties vs loose coupling</p>	<p><i>Key Activities</i> </p> <p>Hierarchy vs network</p>	<p><i>Value Proposition</i> </p> <p>Product vs service</p>	<p><i>Customer Relationships</i> </p> <p>Intermediaries vs end-customer</p>	<p><i>Customer Segments</i> </p> <p>Maintain existing relations vs exploit new opportunities</p>
<p><i>Cost Structure</i></p> <p>Manual vs automation</p>	<p><i>Key Resources</i> </p> <p>Internal vs external</p>	<p><i>Revenue Streams</i></p> <p>Core and complement</p>	<p><i>Channels</i> </p> <p>Offline vs online</p>	<p></p>