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Business Model Innovation in a Mature Industry

A Case Study at Parker Hannifin SCS

Master of Science Thesis
in the Management and Economics of Innovation Programme

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Abstract

Changes in the environment, driven by globalization and technology development, give ground to instability and uncertainty within industries. Consequently, stable business models are challenged by disruption of previous industry boundaries and competition. While close innovation become progressively ambiguous, firms grow further dependent on external sources for innovation. Furthermore, translated to original equipment manufacturers, actors are subjected to developments in technology, customer behavior and tough market sentiments. In response to the changing dynamics, actors are found to invest in business model change to adapt to the new environment. In turn, the pressure is transferred onto suppliers, where Parker Hannifin SCS must engage in similar investments and align with prevailing changes, not to face the risk of business model obsolesce or incompatibility with its customers. Yet, as the business model is an interdependent system, an alteration in one dimension will require accordingly adjustment in the remainder parts.

The aim of this thesis is to understand how a company within a mature industry proactively can engage to innovate the business model. To fulfill this purpose, the research is designed as a qualitative case study, with focus on how the focal company should organize to take on a proactive approach to innovate their business model.

This thesis presents a process purposed to provide a structure for how a mature firm can approach proactive business model innovation. The process comprises 4 phases Assessment, Analysis, Alignment and Adaptability, including detailed sub-steps. The aim is to proactively explore external sources of innovation, rather than awaiting triggers, hence spur ideation that can enable break-outs from industry recipes.

Analyzing the process application at Parker Hannifin SCS, it is found that a formal process with support and incentive to question habitual methods should be provided from the internal organization. Furthermore, a cross-functional team outside of hierarchal structure can ease the decision making and information flow, while creativity could benefit from a distinct mixture of participants in terms of team composition, with both well experienced and new employed with diverse backgrounds. Continually, the project team should be appointed so that competency within each business model dimension is covered, concerning the total system of value creation, proposition and capture. Still, it is essential that each member is open to challenge and adjust accustomed approaches.

It is essential that SCS secure financial capacity to invest in the innovation process and to try various business models. As the process circulate around collaborative business development, it requires top management support for a culture and organizational mindset that is open to collaborations. Further, to comprehend the necessity of such mindset in order to improve probability of success with the possibility to achieve superior value creation through the value chain, thus increase market share and strengthen competitive positioning towards competing actors.

Key words: Business Model, Business Model Innovation, Proactive Business Model Innovation, Business Model Innovation Process, Open Innovation, Analogical Reasoning.

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1. Introduction

This section presents the background, problem formulation, purpose and scope for the thesis. Further, an overview of the report disposition is provided.

1.1. Background

Today, stable business models are exposed to challenging environments in terms of technological, sociological, political and economic factors, driven by globalization and technology development. The result is industry instability and uncertainty, as well as disruption to traditional boundaries and nature of competition (Voelpel et al. 2004), which leaves the conventional approach of closed innovation less reliant. As a result, firms becomes increasingly dependent on external sources for innovation, such as collaborations down the value chain (Saebi & Foss 2015).

Directing focus on manufacturing firms, the concept of business model innovation become progressively imperative for manufacturing firms as globalization has resulted in manufacturing commodification, where it is challenging to charge a premium for high quality products, as well of derive profit from manufacturing competencies. The loss of competitive advantage previously found in either manufacturing processes or product offering require firms to reconsider current business models (Afuah 2014), as part also due to the shorter lifecycle to commoditization of technologies less dependable to stipulate the aspired level of profit (Chesbrough 2007). In relation, Afuah (2014) report of the altered business model dominance where firms to a greater extent outsource, invest in external collaborations, add services and bundle offerings or adjust the revenue model, thus drifting from the previous product-oriented focus on research and development and charge per unit to customers.

Connecting to research focused on business model innovation as a source for renewal, scholars share the view that it is key to firm performance (Zott et al. 2011). Continually, academic publications often highlight the success that have followed for corporations who have innovated their business models, such as seen for Dell, IKEA and Wal-Mart (Voelpel et al. 2004; Euchner 2014; Chesbrough 2007). Similarly, disruption of traditional industries, alternatively the creation of new through business model innovation can increasingly be identified among many of the firms who in recent years qualified for the fortune 500 list (Voelpel et al. 2004).

Moreover, to shed light on the importance of business models, it is argued that a given innovation creates value first when it passes through the system of activities, where dissimilar models will produce different economic results. Hence, financial outcome from a lesser offering that passes through a superior business model can be greater than if the opposite were true (Chesbrough 2010). On that note, implementing an approach for value creation, proposition and capture that deviate from the dominant industry model can derive competitive advantage more sustainable than that from other forms of innovations. The additional sustainability stem from the system complexity where the totality comprised by interconnected elements is difficult to imitate, although competing firms can replicate a few elements (Afuah 2014).

1.2. Problem Formulation

As of current, Parker Hannifin SCS, attempt to move from a primarily product focused, to develop a more service and customer centric approach. During fiscal year 16, Parker Hannifin reported a strategy renewal that in part focus on close collaborations with key customers as well as direct further effort to the aftermarket. These focus areas have recently also been recognized for gaining

in importance among its customers. The previous lack of aftermarket focus, for both Parker Hannifin as a supplier and Original Equipment Manufacturers (OEM), has resulted in low capture rate of market share, where the majority part of high revenue potential consumables is standardized and easily attained, often by actors not responsible for the first-fit.

In relation, heavy machinery producing firms have shifted from a traditional production and product oriented focus towards greater investments into service offer development and aftermarket potential. The adjustment is a result of a stagnating growth in equipment sales and lower differentiation levels of products, where companies attempt to establish a balanced revenue stream by expanding or altering the customer value offering to maintain profitability.

Prevailing technology development, change in customer behavior and tough market sentiments give high pressure from end-customers on OEM, which is further directed onto their suppliers. The problem is that as a highly diversified, product and systems centric supplier, Parker Hannifin is challenged as OEM's invest in business model adjustments in response to changes in market dynamics. To remain competitive and avoid business model obsolesce or incompatibility with its customers, Parker Hannifin invests in close customer collaborations to identify and act on customer oriented solutions in order to align with the prevailing changes and enhance the value that created its customers by contributing to their growth. However, as the business model is an interdependent system, the necessary development of traditional approached found in for example relationships, revenue models and customer value proposition will have a direct impact on remaining business model elements that hence also require adjustment.

1.3. Purpose and Research Question

The purpose of this thesis is to understand how a company within a mature industry proactively can engage to innovate the business model.

The research question that will guide this thesis to fulfill above purpose is:

RQ: How should Parker Hannifin SCS as an incumbent within a mature industry organize to proactively innovate their business model?

1.4. Limitations

Due to time and resource constraints, the thesis is limited to primarily focus on early phase for business model innovation. Hence, it will not attend to subjects such as when to scale, how to manage processes in parallel, change management or implementing methods in detail. Furthermore, per request from the focal company the research will focus on a collaborative approach with large OEMs, thus no attention will be given to characteristics of the customer segment that comprises a high quantity of small customers. In part, since the management and approach to that segment differ from that of OEMs. Yet also with consideration given to the strategic intent to grow key and high potential customers. In turn, this project scope will be delimited in terms of organizational scope, where recommendations will be provided exclusively to Parker Hannifin Sales Company Sweden.

1.5. Disposition

This thesis initiates with a literature review, *see figure 1*, which describes the research that provides a foundation for the analytical framework. The section covers research related to the subjects of business model and business model innovation as well as concepts within open innovation and analogical reasoning. The methodology chapter explain how the study was performed and includes the chosen research strategy, design, method and process, also incorporating a discussion on validity, reliability and generalizability. The third chapter, analytical framework, describes the developed process for proactive business model innovation process. Further, case settings are presented to provide the reader with an understanding of the focal company, as well as selected OEMs for which this study departs. In the analysis chapter, the previous presented process is applied to analyze the empirical findings, followed by a discussion around the findings, to be able to draw on a conclusion and answer the research question.

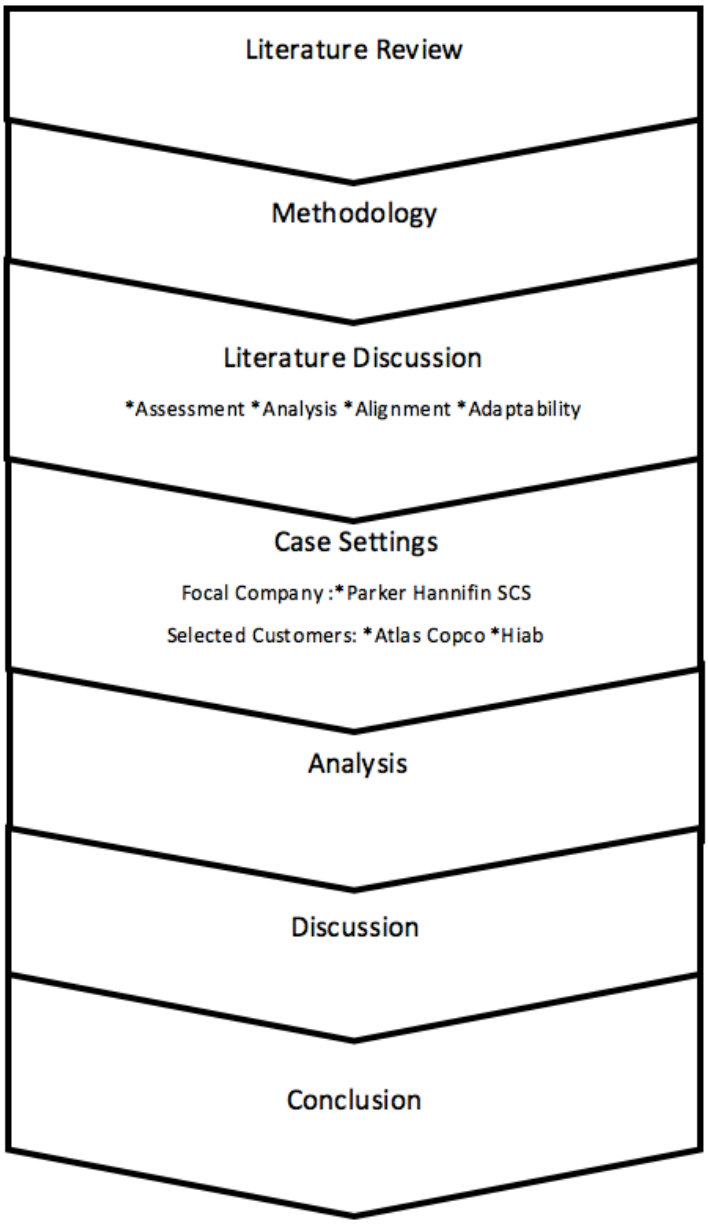


Figure 1: An overview of the report disposition

1.6. List of abbreviations

FY: Fiscal Year

MRS: Atlas Copco Mining and Rock Excavation Service

OEM: Original Equipment Manufacturer

RFQ: Request for Quote

R&D: Research and Development

SCS: Parker Hannifin Sales Company Sweden

2. Literature Review

This chapter will present key literature that provided a basis for the research. In order to set a common understanding for business model innovation, we first define and describe the concepts of innovation and business model. Further, business model innovation is described, complemented with analogical reasoning and open innovation as an approach to innovation opportunities identification.

2.1. Business Model and Business Model Components

The business model controls and creates the value of a new technology by bringing it into the market, hence, the value of an idea or technology with resulting market success is dependent on the business model (Vanhaverbeke & Chesbrough 2014). Traditional the business model has been defined as how firms create and capture value (Afuah 2014; Zott et al. 2011; Chesbrough 2007; Björkdahl & Holmén 2013). However, in the resent work by Clauss (2016), based on an extensive review within business model literature, the author distinguish value creation from value proposition and thus separates customers focus from how value is created. To established a shared understanding throughout this report, a business model will follow the definition by Clauss (2016), a system built on three main dimensions; value creation, value proposition and value capture, *see figure 2.* Value Creation concerns how and with what value is created throughout the value chain. Further, the value proposition refers to how and what the customer is offered. The value capture explains how the company attain sustainable performance, profit and derive revenue from the propositioned value. Furthermore, each aggregate consists of an array of activities, referred to as sub-constructs. From a value chain perspective, the value creation dimension encompass value providers, for example suppliers and additional external contributors, while value proposition take the value receivers, namely customers, into account (Clauss 2016).

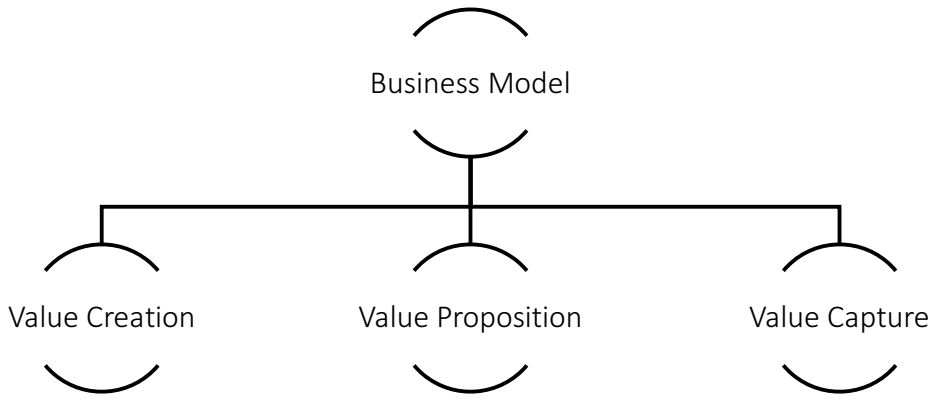


Figure 2: An overview of the business model and its dimensions

The above presented dimensions are classified into the first order of the businesses model. The dimensions are in disaggregated into 10 sub-constructs on a second order, which is broken down into a third order of 71 building blocks. Moreover, the third order comprise categories or components, with the original terminology by the references, used in all papers published between year 2002 and 2014 reviewed by Clauss (2016). Continually, a low level change will impact the aggregate levels, whereas a first order reconfiguration does not necessarily impact every sub-construct and building block on the second and third order. This is further supported by Andries & Debackere (2013), who argue that low complexity adjustments to the business model can provide an improvement within a separate dimension, as the change in either performance or function is small, while larger complexity require accordingly readjustments. Similarly, it is common to find a principal change to one of the dimensions, with subsequent adjustment of the remaining two (Clauss 2016).

Value Creation is disaggregated into four sub-constructs; new capabilities, technologies and equipment, processes and structures, and partnerships (Clauss 2016), *see table 1.*

1st order	Value Creation			
2nd order	Capabilities	Processes and structures	Partnerships	Technologies and equipment
3rd order	Core competency[6] Capabilities[1] Key activities[2] Leadership capabilities[4] Information[9] People[9] (Resources and) competences[12]	Activity system governance [3] Activity system structure[3] Internal and external structures and processes[4] Internal and external organization[12] Norms[9] Organization[5] Processes[5,9] Resource velocity[9] Rules and metrics[9] Value configuration[6]	Customer information[7] (Internal) and external) organization[12] Key partners[2] Networking[5] Partner network[6] Partnerships/ alliances[9] Suppliers[7] Supply chain[5] Value chain to create (and distribute) value[8] Value network[11]	Key resources[9,2] Resources[10] Technology[9,11] Equipment[9] Resources (and competences[12]

Table 1: An overview of the disaggregated Business Model dimension Value Creation (Source: Clauss 2016)

[1] (Afuah 2014)
[2] (Osterwalder et al. 2005)
[3] (Zott & Amit 2010)
[4] (Voelpel et al. 2004)
[5] (Sawhney et al. 2006)
[6] (Osterwalder et al. 2005)
[7] (Shafer et al. 2005)
[8] (Chesbrough 2010)
[9] (Johnson et al. 2008)
[10] (Huarng 2013)
[11] (Koen et al. 2011)
[12] (Demil & Lecocq 2010)

New capabilities, attained through training, learnings and integrated knowledge, are required to act on external opportunities and make accordingly adjustments to resources, capabilities and structures. The ability for opportunity exploitation and internet reconfigurations demands organizational and managerial activities. New technology and equipment concerns the technology that a change requires, for example payment systems in the event of revenue model configuration. New processes and structures links activities and is closely related to the business model efficiency. New partners are regarded as external resources, which are often required for complex changes (Clauss 2016).

Value Proposition is disaggregated into four sub-constructs of new offerings, customer segments and markets, channels and customer relationships (Clauss 2016), *see table 2.*

1st order	Value proposition			
2nd order	Offerings	Customer segments/markets	Channels	Customer relationships
3rd order	Activity system content[3] Platform[5] Product/service flows[7] Solutions[5] Customer benefits[13] Technologies to be embedded into products and services[13] Value[10] (New) products and services[14] Value is generated[14] Job to be done[9] Output[7] Offering[7,5,9]	(New target) markets[13] Positioning [16] (Target) customer[6,7,9] (Market/customer) segments[7,8,21] Presence[5]	(Distribution) channels[69] Value delivery and linkages[15] Value chain to (create and) distribute value[8]	Customer engagement[15] Customer experience[5] Customer relationship[6,7,2] Brand(ing)[7,5,9] Marketing and sales logic [16]

Table 2: An overview of the disaggregated Business Model dimension Value Proposition (source: Clauss 2016)

New offerings belong to one of the reconfigurations that is most noticeable, and refer to new services and products to customers. New customers and markets concerns customer targeting and market segmentation, based on their willingness to pay for a firm's offerings, which in terms of innovation means redefinition of existing or new market entry. New channels refer to how value is delivered to the customer. Customer relationships is about the ability to maintain current and form new customer relationships, which in particular in mature markets or high substitution

[13] (Teece 2010)
[14] (Achtenhagen et al. 2013)
[15] (Baden-Fuller & Mangematin 2013)(Baden-Fuller & Haefliger 2013)
[16] (Matzler et al. 2013)

are source of innovation as it provides information on needs and changes that can spark changes (Clauss 2016).

Value capture is disaggregated into two sub-constructs of new revenue models and cost structures (Clauss 2016), *see table 3.*

1st order	Value capture	
2nd order	Revenue models	Cost structures
3rd order	Revenue model[6,9,1] Revenue streams[2,13] Revenue/pricing[7,10] Revenue mechanisms[8] Profit formula[9,16] Monetization[15] Estimation of (cost structure) and profit potential[8] Volume and structure of revenues[12]	Cost (structure)[6,9,2,10] Estimation of cost structure (and profit potential)[8] Financial hurdle[11] Margin (model)[9,12] Volume and structure of costs[12]

Table 3: An overview of the disaggregated Business Model dimension Value Capture (source: Clauss 2016).

New revenue models regard the firms' encouragement toward customers to monetize on the value proposition, more specifically; when, how long and by whom. Further, complementary sources of revenue through for example service contracts and cross selling can increase revenue model stability. New cost structure regards all costs related to operating the business model, which should be aligned with corporate strategy (Clauss 2016).

Not included in above described dimensions are external factors and strategies, which some authors argue should be included within the business model. However, the vast majority chose to distinguish these factors from the business model, although a commonly shared view is that it instead should be regarded as separate still reasoned relevant for business model innovation (Clauss 2016).

2.2. Business model innovation

The number of contrasting definitions on what constitutes a business model increase complexity in distinguishing what separates a business model innovation from other modes of innovations, or merely improvements (Björkdahl & Holmén 2013). In addition to the previously provided business model definition, it is equally important to define what represents an innovation. An innovation is hereon after defined as when diverging from the standard and doing something differently (Afuah 2014). When combined, the definitions rationalize that business model innovation is a different way of creating and capturing value (Afuah 2014). However, the notion business model innovation can give two distinct interpretations; either as a process or as an outcome (Taran et al. 2015). Taran et al. (2015) argue that the process follow a envisioned outcome, where a clear appreciation of desired result will improve quality of process design, management and organization (Taran et al. 2015).

According to Afuah (2014), the first step towards business model innovation for firms that have a business model, is to uncover the existing. Further, it is important to continuously consider how to innovate, as external environment is under constant change and thus affect business model efficiency (Chesbrough 2007). In relation, Giesen et al. (2010) address the importance of having the right model that fit into both the external and internal environment, where both external and internal change drive need for business model innovation (Giesen et al. 2010). Furthermore, introduces the critical factors; aligned, analytical and adaptable for successful business model innovation.

Moreover, Björkdahl & Holmén (2013), argue that the existing business model remains competitive until obsolesce, where the result is an absence in the signaling and sense of urgency that trigger changes. Further, previous success in existing business model creates lock-in, where changes made are similar to those by other actors (Björkdahl & Holmén 2013). In addition, for mature firms there is a tendency that external information that do not comply to current logic is dismissed. Instead the search is guided by what can fit into the existing model, which is why firms must invest in innovating the business model before it become inadequate (Chesbrough 2010).

Afuah (2014) discuss the common mistake to overlook the impact an innovation in one dimension will have on remaining elements. A suggested approach is to distinguish both elements in need of change and elements affected, with internal modifications and required redesign (Afuah 2014). In line with this view, the previous description of the conceptualization by Clauss (2016) allows for aggregate analysis of the drivers and impact from business model innovation, and argued empirical useful when the aim to understand a micro perspective and the system of activities comprised by modifications and effects. In addition, the comprehensiveness ensures that focus goes beyond the most visual and evident dimensions, for example product development, and can *"stimulate ideas for business model innovation in certain areas"* (Clauss 2016, p.16).

Moreover, in terms of business model implementation, Johnson et al. (2008) argue for a comparison between new and existing model and determine upon implementation, while Casadesus-Masanell & Tarziján (2012) write that it is possible to attain success in parallel business model. Here, one must evaluate whether the models are complementary or contradictory, by considering compatibility between resources and capabilities from respective model, as well as similarities in the use of physical assets. Further, Markides & Oyon (2010) provide complementary insight that primary attention should be directed to activities that can and should not be performed together, rather than on operating separate models. Markides & Charitou (2004) add to parallel business model with that one should focus on a level of integration that allow for synergy effects between models.

Continually, Chesbrough (2007) argue that one can first attempt a model in small scale to explore potential, and if successful fast scale into broader application within the firm. The author further argue that it is possible for multiple models to co-exist within different segments, but that there is an emerging challenge of internal competition between the new and existing model.

Moreover, business model scalability can be defined as *"achievement of a marginal income greater than or equal to the marginal cost or an increase of any size that ensures that average income exceeds average cost within some defined margins."* (Björkdahl & Holmén, 2013, p.222). However, Björkdahl & Holmén (2013) argue that it is difficult to design a business model so that it is scalable, with consideration to the lacking standardized approach to predefine how to identify and analyze the exact factors that make a business model scalable.

2.2.1. Analogical reasoning

There are many examples where startups have constructed novel business models through imitations adapted from other industries, referred to as cross-industry imitation. The same approach has been successfully applied by incumbents. One example is Nespresso's pricing model for coffee capsules, influenced by Gillette's razor blade strategy, resulting in increased profitability and growth (Mezger & Enkel 2013). Mezger & Enkel (2013) argue that examining business model designs beyond industry boarders is advantageous as the often existent industry recipe for business model design constitutes a barrier. The authors explain cross-industry imitation as an approach to problem-solving, where a target industry imitates and adapts existing principles, for example knowledge, processes and technology, used in source industries. Furthermore, Mezger & Enkel (2013) discuss cross-industry imitation as early step in business model innovation where successful imitation requires capabilities, such as explorative, sensing, combinative and adaptation, which in turn requires a strategic intent for openness, broad base knowledge, learning processes and cross-domain knowledge.

An approach to innovate the business model is analogical reasoning, defined as *"the application of structured knowledge from a familiar domain to a novel domain"* (Martins et al. 2015, p.106). For an individual, analogical reasoning is a natural process for the sense making of new information. The concept is argued suitable for business model innovation as it utilizes existing knowledge beyond industry boundaries as a source of innovation and provides a systematic process (Martins et al. 2015). According to Mezger & Enkel (2013), analogical problem solving, as well as cross-industry imitation are methods acknowledged for its application and benefits, such as potential disruptive solutions, risk reduction and time for development, in complex strategic decisions and product development. Further, the recognized benefits are argued applicable also when used for business model innovation purposes (Mezger & Enkel 2013).

Mezger & Enkel (2013) describe a three step process for analogical thinking in business model innovation; abstraction, analogy identification and adaptation. The starting point are well-defined problems to which one aspire to identify a solution. First, the abstraction step focus on problem breakdown aimed to identify abstract reference points to expand feasible solution space. By specifying abstract elements, it is possible to break free from ties to a specific industry and product, and the search for solutions can stretch across industry boarders. The second step, analogy identification, focus on two parts; solution search and evaluation. Here, the target should be considered against how and why a given model is successful in the source industry. In the final step, adaptation, the potential and required requirements should be understood to determine level of transfer; *"(1) direct transfer, (2) transfer of structure or functional principles, and (3) use of analogy as idea stimulus. "*(Mezger & Enkel 2013).

Although any business model dimension can trigger an innovation, an innovation process typically initiates with the value proposition. The reason is the dimension centricity as the business model is organized around a commercial opportunity. A novel value proposition can be created from customer engagement aimed to realize needs as well as willingness to pay, where after remainder dimensions should align to improve the delivered value (Mezger & Enkel 2013).

Similarly, Hargadon (2015) argue that there are three key decisions that require alignment when developing a new business model. First, what the customer want, disregarding benefits from current offering, with focus on customer problem and possibility to assist simplification of remove. The second decision regard what the firm can deliver, with current and required

capabilities and the possibility to control activities, alternatively enter third party collaborations. The third decision regards how to monetize the value proposition (Hargadon 2015).

2.2.2. Open Innovation

A company that work with open innovation can and should use both external and internal ideas for technology advancement, product-, process- and service development (Vanhaverbeke & Chesbrough 2014). Huang et al. (2013) argues that a free flow of ideas, both within and between companies, occurs when the involved actors are open for changes in their business model, also emphasizing the point of allowing for various types of sources for innovation. Similarly, Vanhaverbeke & Chesbrough (2014) argue that without open innovation, a business model can be seen as static. Hence, it is essential that a company who wants to have an open approach to innovation do not work in isolation, yet rather realize the importance of collaborations with different types of partners to gain external ideas and resources (Dahlander & Gann 2010). A company that is open and allow external sources for innovation, through collaborations with external organizations, will change the original business model while saving time and lowering cost (Huang et al. 2013).

According to Huang et al. (2013) companies' need to constantly look for new innovative ways to do business, in order to reach and maintain a market position in a highly competitive environment. This can be achieved through external collaborations, by utilizing accessible information for strategic renewal that favor innovation. Furthermore, speed up innovation activities, with the purpose of generating a higher value.

Chesbrough & Bogers (2014, p.4) define and conceptualize open innovation as "*a distributed innovation process that involves purposively managed knowledge flows across the organizational boundary*". The authors highlight involvement and utilization of research and development spillovers and differentiate between *inside-out* and *outside-in*, which can be used in combination or in separate. *Outside-in* consider how a company can accelerate internal innovation by leveraging external knowledge and technology, argued often linked to R&D activities. In contrast, *inside-out* focuses on providing internal knowledge to external actors in order to spread innovation into the market. Dependent on type, there are different methods, processes or tools that can be used to attain external sources for innovation. Continually, it may be beneficial become involved where there are user interest, for example using network or communities (Chesbrough & Bogers 2014). Overall, open innovation clearly contributes to changes in the business model and favor business model innovation (Huang et al. 2013; Chesbrough & Bogers 2014).

The open innovation approach does not in itself produce value for the firm, but is rather dependent on the business model, which will shape the value of an idea. Moreover, it is the business model that set the requirements for systems relevance towards the knowledge input from external sources. Further, Vanhaverbeke & Chesbrough (2014) explain the difference between open innovation and open business model innovation. The first is explained as a method used to innovate a business model though a new and dynamic approach to value creation and capture, while the second emphasize that the business model itself can be innovated, generate new ways of realizing value by the firms innovation activities.

Continually, open business models are explained by the concept division of labor, where there is an innovative labor. The creator of an idea is one party, who can either produce and distribute the offer or sell the idea to another party, which in turn bring the idea to the market. This makes

the actors value chain partners and improves the distributed company's business, both by research and development productivity and increase number of innovations, where the idea creator rely on existing transactions. An actor that has an open business model use the division of labor to create and capture more value. Here, value is enhanced by utilizing external ideas, while at the same time more value is captured by for example entering new businesses and leveraging key recourses. Further, the authors argue that an open business model will strengthen the financial performance by decreasing cost for innovation and at the same time increase revenue, for example through licensing agreement (Vanhaverbeke & Chesbrough 2014).

According to Vanhaverbeke & Chesbrough´s (2014) above description of a value chain partner with regard to open business models, it could be a supplier, as Brem & Tidd (2012) explain in their chapter of supplier innovation (Brem & Tidd 2012), who researched both quantitative and qualitative publications on supplier innovation and supplier involvement in open innovation. As a result, the authors differentiate between topics based on its contextual interdependencies; first, the importance of supplier innovation is associated with the understanding around supplier innovation. Second, the requirements of supplier innovation concerning how the supplier is compatible with customer expectations, for successful collaboration between actors. Third, managing supplier innovation corresponds to the management around collaborative innovation and the reliability of suppliers. Lastly, supplier innovation outcome expresses the benefit with which the innovation contributes (Brem & Tidd 2012).

The topic of the importance of suppliers is mostly related to how knowledge outside the company is created and pushed into the company's innovation process, where the importance of involving and sharing knowledge with external parties is validated by many scholars. A key source for new product development projects are networks of alliances, however, some argue that the company's geographic location further affects how a firm work with as well as perceives networks. A supplier with an interest in customer collaboration with regards to future development projects needs to strategically market level of cooperativeness, seemingly more important than the actual technical knowledge contributions (Brem & Tidd 2012).

The second topic advocates that both actors need support of senior management, it is thus essential that there is a suitable connection between the actors' culture on how to cooperate with regard to supplier innovation, the basis for technical standards, as well as a strategic fit. Further, in early supplier involvement one should consider the level of integration concerning the relationship and information shared between supplier and customer (Brem & Tidd 2012). Moreover, the supplier involvement usually depend on "*coordinated design, execution, and evaluation of strategic long-term processes and operational short-term processes*" (Brem & Tidd 2012, p.81).

3. Methodology

This chapter describes the research strategy and design, methods for data collection as well as an outline of the research process. In addition, a discussion concerning validity, reliability and generalizability is incorporated into respective part.

3.1. Research Strategy and Design

Easterby-Smith et al. (2012) argue that it is common that a qualitative study is performed when a researcher aim to deepen the understanding of problems, as well as generate ideas, within a particular area, where the product is rich and informative (Easterby-Smith et al. 2012). In line with this view, this master's thesis was performed as a qualitative case study. The qualitative research strategy was argued suitable with consideration taken to the purpose of understanding how the focal company can organize for proactive business model innovation, which require rich and case specific information. Furthermore, the selected case study research design, with two embedded cases, is rationalized by the possibility for in-depth analysis gained from a small sample, as well as the multiple methods for data gathering, but also cross and within case analysis (Easterby-Smith et al. 2012).

Qualitative case studies often face critique of lacking generalizability to the general population, and that the high volume of collected data open up for researchers interpretation (Easterby-Smith et al. 2012). In response to this critique and to strengthen validity of results, the thesis followed suggestion from Yin (2002) that "*all case studies should have a clear design produced before any data is collected*" (Easterby-Smith et al. 2012, p.55), with a pre-structure in terms of key questions, unit of analysis and approach to data interpretation, prior to project initiation (Easterby-Smith et al. 2012). However, in line with the view of Roger Stake, researchers focus on attaining a rich picture above validity, where the results may or may not be generalizable (Easterby-Smith et al. 2012 p. 55). Furthermore, the analytical framework for this study, that present a process for business model innovation, is argued generalizable for cases of similar characteristics (Easterby-Smith et al. 2012). However, the process replicability into another contextual environment will depend on the level of similarities to the focal company, and thus subjective to the reader interpretation. Nonetheless, the data was triangulated through the inclusion of more than one case for multiple perspectives, as well as complementary information from for example annual reports, which is argued to strengthen the validity.

3.2. Research Method

The methods for data collection, divided into literature review, secondary and primary data, will be described in this part. The data has been gathered from iterative review of both empirical and scientific information throughout the research process.

The sampling method was of a strategic nature, where companies were selected based on relevance to the research purpose, what according to Bryman & Bell (2003) is referred to as purposively sampling. The selection consists of the focal company's prioritized customers, who have relational similarities in terms of size and geographic presence, where also both OEMs are considered to have significant future potential in terms of close collaborations to approach mutual growth in sales and revenue.

Furthermore, the authors cooperated in each step throughout this thesis, present for reviewing, reconciling and synchronizing all work, which is why the internal reliability is argued high.

3.2.1. Literature review

An iterative literature review on existing theory followed throughout the thesis. Publications on the concepts of business model innovation, business model, analogical thinking and open innovation was covered to create an initial analytical framework, in order to provide a basis for proceeding empirical analysis.

First, the concept of business model innovation was broken down and defined into the components of innovation and business model, to ensure that the underpinning definitions are clear to the reader. Followed by a review and elaborate description of the business model dimensions, business model innovation, analogical thinking and open innovation, *see figure 3*.

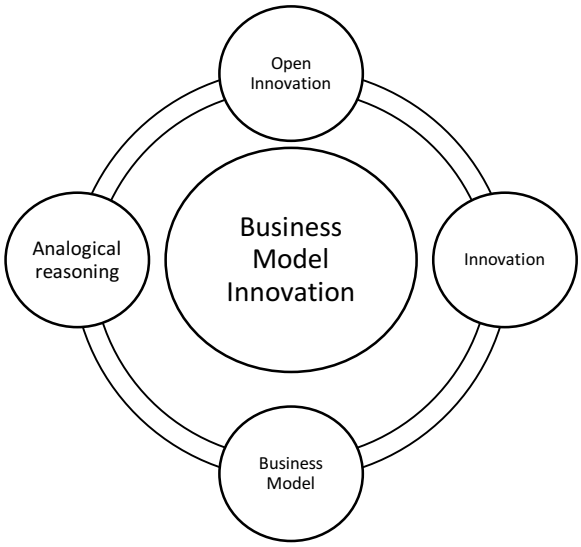


Figure 3: Key theoretical concepts

With regard to the business model concept, the researchers discovered that a uniform view on definition and included elements in the business model dimensions greatly varied among scholars. This, in part, was the rational for selecting the business model conceptualization by Clauss (2016), which has been generated based on an extensive review of recent publications on the subject matter. Further, the three level dimensions was concluded suitable also for the use in the uncovering an existing business model, as well as for the analysis of dynamic relation in event of dimensional change.

To be noted, complementary literature within industry lifecycle and service-driven design was added during analysis to be able to explain the specific case situation. The theory was found useful as it brought in the additional perspectives to complement what could not be rationalized by the foundational literature of business model innovation, from which the process departed.

The main source used for data collection was data portal searches on Google Scholar and Chalmers library. Additional print-out material in form of academic papers and books sections were provided by the supervisor at Chalmers University of Technology.

3.2.2. Secondary Data

Secondary empirical data was gathered for both the focal company and respective customer in multiple iterations during the research process, both as stand-alone information and to complement primary data.

The empirical data was gathered with the purpose to understand the macro environment, the industry, the organization and operations. The information was gathered in a combination of focal company and customers' involvement, where internal material was distributed. Additional information was collected from online searches, where the majority consisted of management reports, annual reports and homepages of respective case.

3.2.3. Primary Data

Qualitative interviews were conducted at multiple occasions and were the principal method for data collection, *see table 4.* According to Easterby-Smith et al. (2012) qualitative data is gathered when the researcher wish to understand perspectives, and the basis for those perspectives, which was a prerequisite to fulfil the purpose of this thesis.

INTERVIEW SESSION	AIM	CASE INVOLVEMENT
1	Holistic understanding of the focal company and the diverse industries in which they are active. General understanding of the aftermarket.	Focal company
2	The business models, challenges, opportunities, strategies and goals.	Focal company and respective embedded case
3	Complete the view aspired for in preceding step. Dig deeper or to cover newly developed questions. Iteration back to the company to confirm information gathered.	Focal company
4	Confirm previous gathered information, as well as assess required business model reconfigurations to create alignment.	Respective embedded case

Table 4: A specification of the case company involvement and aim of the interviews conducted in each phase

To be noted, all empirical data presented in the case settings chapter, if not otherwise stated, was attained from the interviews.

Initial interviews in session one consisted of unstructured and explorative interviews, which were conducted during the project planning. The format was informal with little preparation, aimed to form an understanding for the focal company, as well as the customers. Included were a broad spectra of positions at the focal company to attain a holistic perspective, yet, predominantly account managers, inside sales representatives, product specialists, marketing representatives and aftermarket development, *see table 5*. The researchers also attended internal and external meetings, to gain a base knowledge about the focal company's and observe actions against customers other than those included in this study.

PHASE 1: UNSTRUCTURED AND INFORMAL INTERVIEWS

COMPANY: PARKER HANNIFIN

PURPOSE	DATE	POSITION
INTRODUCTION TO PARKER HANNIFIN SCS	151218	Sales Manager Global Account & Group Sales Leader Hydraulics
	151218	HR Manager
AFTERMARKET INTRODUCTION	160128	Key Account Manager 1
	160215	Key Account Manager 2
	160126; 160128; 160204	Account Manager – Business Developer Aftermarket
	160204	Marketing Manager
	160310	Operations Manager
	160211	Sales Development
	160211	EMEA Service Manger
	160229; 160418	Sales Engineer
INTRODUCTION TO RESPECTIVE EMBEDDED CASES	160125; 160128; 160222	Global Account Manager 1 (for Atlas Copco)
	160121;160210; 160211	Global Account Manager 2 (for Hiab)

Table 5: A specification of the purpose and interviewees in the first interview session

The information gathering for the business model innovation process started with in-depth interviews with both employees at the focal company and embedded companies, *see table 6*, continued with a follow-up session and iteration for the focal company and account managers responsible for the embedded companies, *see table 7* and the last step was an iteration, *see table 8*. The iteration aimed to confirm previous gathered information, from both Parker Hannifin SCS and respective customer, to increase the reliability and validity of the study.

Nine in-depth, semi-structured interviews were performed with employees from different positions at the focal company, to obtain a holistic view of Parker Hannifin SCS´s current business model, *see table 6.* Furthermore, four in-depth, semi-structured interviews was the primary method for information gathering from customers. In-depth interviews were used to learn views, perceptions and opinions from interviewees to be able to reveal novel aspect of problems (Easterby-Smith et al. 2012). An interview template with open-ended questions, *see appendix 1 and 2*, were used for first round interviews. According to Bryman & Bell (2003), this method allows for comparisons between interviewees, where researcher can attain elaborate answers from the possibility of asking follow up questions (Bryman & Bell 2003). The questions were given a priority from high to low, and researchers used what Easterby-Smith et al. (2012) refer to as a topic guide, which provide a loose structure that allows deviation and re-sequence, yet covers the predetermined topics while at the same time producing rich data. Moreover, the interviews can be divided into three parts for the OEM companies; first, general questions were asked to get to know the companies and understand the current situation. Second, the researchers engaged in in-depth interviews to comprehend where the customer are heading and finally, open questions concerning the future and willingness to collaborate with suppliers.

Further, the first round interviews were also held at the place of OEMs, connected to Easterby-Smith et al. (2012) discussion on that such approach presents a neutral environment where interviewees may feel more at ease to openly disclose their views. The general structure and selected questions were provided to the interviewee in advance, for preparatory purpose and to make the respondent(s) comfortable in what to expect. The follow-up session was conducted to dig deeper into previous discussions, alternatively to cover newly developed questions. Hence, these inquiries varied between samples, yet were based on the initial template. The format for this session was via phone, with the addition of brief email correspondence in the event of necessary confirmation of provided information.

Both researchers were present during all interviews to avoid subjectivity and researcher's interpretation, where one was responsible for note taking, while the other was in charge of the interview. In addition, all interviews were recorded and transcribed, to be able to direct all focus on the interview, with the possibility to later review the discussion and ensure that no details were overlooked. To avoid to limit interviewee responses due to the recording, researchers carefully asked permission and made clear that the recording can at any time be turned off in case of sensitive content (Easterby-Smith et al. 2012).

Easterby-Smith et al. (2012) discuss the importance of trust and motivation when conducting in-depth interviews. The researchers thus clarified the potential long-term benefit of engaging in the project, at the initial interview with the customers, as the results aim to contribute to their growth and profitability.

SESSION 2: SEMI-STRUCTURED INTERVIEWS

PURPOSE: IN-DEPTH

COMPANY	DATE	POSITION
PARKER HANNIFIN SCS	160406	Inside Sales
	160310; 160425	Sales Manager & Group Sales Leader Hydraulics
	160412	Customer Service Manager
	160414	Supply Chain Manager
	160414	Account Manager
	160414	Key Account Manager 2
	160419	Marketing Communications
	160419	Marketing Communications
	160425	Operations Manager
ATLAS COPCO MRS	160323	Global Lead Buyer
	160323	Commodity Manager – Strategic Purchasing
	160323	Marketing
HIAB	160211; 160324	Director Sourcing Services
	160211	VP Product
	160211	Product Manager
	160211	Product Manager Services
	160211	Sourcing Director
	160422	Dealer Development Manager

Table 6: A specification of the purpose and interviewees in the second interview session

SESSION 3: ITERATION

PURPOSE: NEW INFORMATION & CONFIRM INFORMATION

COMPANY	Date	Position	Organizational unit
PARKER HANNIFIN SCS	Throughout the research period	Sales Manager Global Account & Group Sales Leader Hydraulics	Global Fluid Power
	Throughout the research period	Global Account Manager 1 (Atlas Copco MRS)	Mobile
	Throughout the research period	Global Account Manager 2 (Hiab)	Mobile

Table 7: A specification of the purpose and interviewees in the third interview session.

SESSION 4: ITERATION

PURPOSE: CONFIRM INFORMATION

COMPANY	Position	Organizational unit
ATLAS COPCO MRS	Commodity Manager Strategic Purchasing	Mining and Rock Excavation Service
HIAB	Director Sourcing	Hiab Services

Table 8: A specification of the purpose and interviewees of the fourth session.

3.3. Research Process

The project process, *see figure 3,* was divided into four steps. First, researchers reviewed previous publications related to business model innovation and open innovation, to understand the concepts behind, *what is business model* and *how to innovate the business model*. Moreover, a process for business model innovation was developed in iteration between key literature related to business model innovation, open innovation and the case characteristics. In specifics, with regards to a discussion on scalability during business model innovation it is acknowledged that volume and profit contributions by respective OEM is of such significance that it is worthwhile to attend individual focus to each customer.

Second, the analytical framework was applied to understand how the focal company should organize to innovate their business model, departing from the existing business model and the current situation of selected customers'. Further, the process further incorporates a cross-analysis, where the focal company is matched against their customers or industries, to find new innovation sources, *see figure 4.*

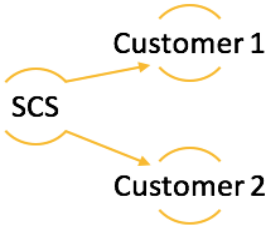


Figure 4: Visualization of the how the cross-analysis towards customers is performed.

Third, analysis and discussion primarily depart from the theory used to develop the analytical framework, as well as a selection of the gathered empirical data, while additional supporting literature was included as needed. Parts of the information derived from interviews are discussed and analyzed in further depth, as considered more relevant in order answer the research questions and fulfil the purpose of this thesis. Hence, certain data used to enhance the understanding of business models, strategies, external environment and the collaboration between SCS and respective customer has been left out. Thus, the generated process is executed and analyzed based on how SCS operate, and recommendations cannot thereof be guaranteed to be relevant to other units in the organization.

The last step in this research provide recommendations on how to successfully use the business model innovation process.

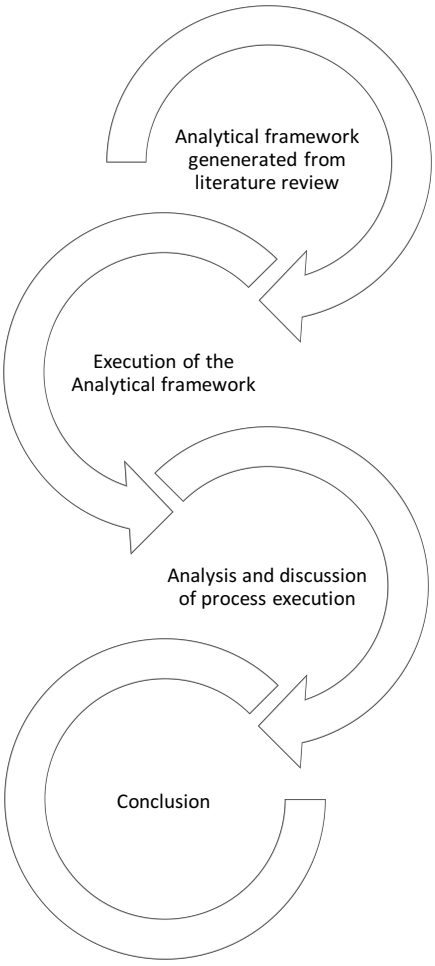


Figure 5: An overview of the research process

4. Analytical Framework: Business Model Innovation Process

The developed process is purposed to provide a structure for how a mature firm can approach proactive business model innovation to break free from industry recipes (Mezger & Enkel 2013). Building on business model innovation literature, in terms of how this can be a planned process, the aim is to proactively explore external change. Further, continuously work to innovate the business model rather than awaiting triggers (Voelpel et al. 2004).

The process comprises 4 phases; Assessment, Analysis, Alignment and Adaptability, including detailed sub-steps, with labeling inspired by Giesen et al. (2010). The first two phases, assessment and analysis, focus to create an awareness and spur ideation from multiple sources; macro level trends, market developments, the existing business model set-up as well as the dynamics between the focal company's business model and strategy to that of its customers. Also, by expanding the search across firm boundaries into leading industries and firms. Further, the third phase focus on attaining efficiency from an innovation opportunity through attentive readjustment of business model elements, as well as necessary reconfigurations to align with the external environment. Moreover, the fourth and final phase focus on piloting and implementation, with the ability to operate the new business model in parallel to the existing, as well as the scalability of a new business model.

The illustrations presented below are purposed to provide the reader with a clear structure and should not be interpreted as purely linear. Hence, in line with the view of Bucherer et al. (2012), who argue that BMI seemingly is chaotic and iterative, one should allow for iteration both between and within phases. Continually, examples of mechanisms that may require iteration are misalignment in terms of external fit resulting from ecosystem change, internal resources and between new and existing model in case of implementation (Björkdahl and Holmén 2013).

4.1. Phase 1: Assessment

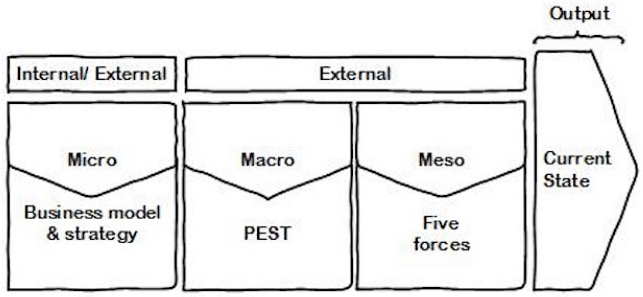


Figure 6: An illustration of the first phase and respective sub-steps in the business model innovation process.

The first phase, assessment, divided into external and internal influences, is purposed to create a holistic understanding of the current situation, incorporating a macro, meso and micro perspective. In accordance with open innovation literature and the view of Dahlander & Gann (2010), it is essential that a firms do not work in isolation, but rather take on an open approach to attain external ideas and resources. Further, the incorporation of external factors is supported by the view from many scholars who argued of its impact on business model innovation, since exogenous influences determine the viability and efficiency of a given business model (Clauss 2016), why this phase structure a purposive screening of the external environment.

The aim is thus to further use assessed information in order to identify sources of innovation in the external environment. Yet also, in line with the view by Babatunde & Adebisi (2012), to understand factors that affect the business by continuous scanning, to make according adjustments to strategic initiatives. In addition, Huang et al. (2013) argue that including external sources and partners can have the benefit of time and cost saving for business model change, where the involvement of customers has the potential to contribute such benefits. Further, considering a supplier context, the input to the assessment phase should include customers perspective, in line with open innovation literature that emphasize receiving and sharing external knowledge for innovation (Chesbrough & Bogers 2014).

Micro. In contrast to start-ups, mature firms have an existing business model that will be the basis for what to innovate, whereas it must first be uncovered (Afuah 2014). It is thus essential to have an in detail understanding of the existing model (Clauss 2016), namely how value is created, propositioned and captured. Further, using the dimensions presented by Clauss (2016) for assessment, argued useful for a micro perspective, and the sub constructs to enable a detailed analysis of the drivers and effect of an innovation to the business model. Further, strategies are also included, argued important for business model innovation (Clauss 2016).

Macro. To induce further structure into the macro assessment, the macro economic environment is based on the PEST framework. Although the tool and output usually is used in strategic planning (Mind Tools 2004), it is also argued viable to assess the current situation. In this sub-step, a PEST analysis can guide the information search to capture essential input on political, technological, economic and social factors. As such, it will simplify the macro assessment by directing the user to essential information, which in turn can improve management and quality of gathered data.

Meso. For meso assessment, it is important to have an open approach in order to comprehend the dynamics and development within a given industry (Dahlander & Gann 2010). Here, the five forces framework is used in order to structure the analysis of industry dynamics, as well as allow for comparisons between industries. The framework assures that key perspectives of rivalry, bargaining power of suppliers and buyers, and threat of new entrants and substitutes are taken into consideration. Hence, it allows for an overview of the industry and the nature of competition (Porter 2008).

4.2. Phase 2: Analysis

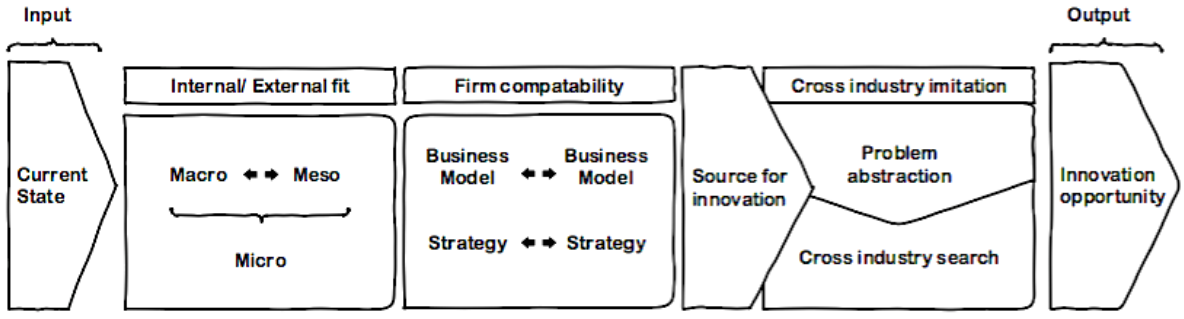


Figure 7: An illustration of the second phase and respective sub-steps in the business model innovation process

The second phase, analysis, includes three sub-steps; internal/external fit, firm compatibility and cross industry imitation, purposed to analyze and uncover sources of innovation within the external environment. First, macro and meso level is analyzed to explore the change in industry dynamics as a result of macro level factors. This step, just as proceeding sub-steps, can uncover both alignment and misalignment, which in turn can trigger innovation. The second sub-step involve a cross-company analysis where the strategic intent and business model are analyzed in regards of alignments and misalignments, with respective customers. Further, Voelpel et al. (2004) clearly presents the necessity of alignment to the external environment, when describing the identified differentiators between so called new and old economy. Where information digitalization, virtual economic transactions, reliance on intangible assets, disintermediation, industry convergence and change in the traditional organization, and value chain structure were among the most prominent. These will trigger a required change to sustain in the marketplace. Emphasis is put on the necessity for a company to persistently differentiate, reinvent or create new models instead of optimizing existing.

In line with the purpose to reveal external sources for innovation, one must be open for business model changes to share and absorb external ideas (Huang et al. 2013). To have an open approach (Vanhaverbeke & Chesbrough 2014), and align with actors outside the boundaries of the firm (Giesen et al. 2010), are essential for a close cooperation. Moreover, collaborating with external actors can allow a supplier to utilize existing assets and capabilities in a new way (Giesen et al. 2010) while at the same time present a source for innovation. This is in line with Brem & Tidd (2012) arguments regarding the importance a shared view on how to innovate through external collaborations along the value chain. Furthermore, this sub-step is in part to be regarded as an idea pool for innovation, whereas opportunities and challenges will reflect on what to innovate.

Continually, the firm need capabilities to act on external opportunities and innovate the business model, where training, knowledge integration and continuous learning are capability building (Clauss 2016), which can be further completed by the utilization of external actors (Huang et al. 2013). Continually, to be able to create external consistency Giesen et al. (2010) argue that there must be an alignment between firms business models and organizational ability of conducting business model innovation.

For analysis of firm compatibility, the aim is to understand compatibility between current business model dynamics between the supplier and customers. Moreover, a supplier and customer that aim to approach innovation in collaboration need to be compatible in terms of supporting senior management, culture of how to innovate with another actor, technical standards and strategies (Brem & Tidd 2012), and should thus be considered in this step.

Continually, analogical reasoning is in this phase be used as a process for systematic and attentional engagement, to address inertia and innovate without being forced from external change (Martins et al. 2015). One way of attaining an idea for a new business model is through cross-industry search and using Mezger & Enkel's (2013) three step process of abstraction, analogy identification and adaptation. Further, this approach enable to diverge from Voelpel et al. (2004) discussion on ”run differently” instead of ”running harder and harder”, and reduce the risk that rationality and established principles can result in overlooking external developments, where firms only change when forced.

Moreover, the cross-industry imitation is used for systematic approach to address the challenges and opportunities, where specific challenges and opportunities are abstracted to open a wide solution space and allow for cross-industry search for existing solutions. This benchmarking approach is according to Mezger & Enkel (2013) suitable to use in order to attain an innovative business model. Further, imitation from other industries and utilization of excising principles is used to solve the current problems identified for this study, where the search for business model design beyond the industry in which the firm is active (Mezger & Enkel 2013), enables the supplier to utilize existing information spanning across industry boundaries (Martins et al. 2015).

4.3. Phase 3: Alignment

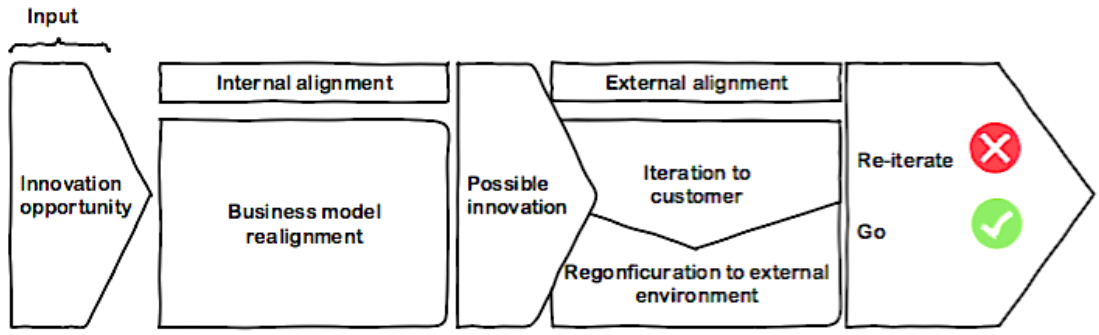


Figure 8: An illustration of the third phase and respective sub-steps in the business model innovation process

The third phase, alignment, focuses on solutions replicability and required adjustments to fit the new contextual environment of the supplier. The aim is to organize the directly imitated, alternatively redesigned opportunities into complete solutions. Further, to classify these opportunities into the business model components; value creation, value proposition and value capture, and break down the component into sub-contracts to identify the impact and required changes within respective component.

What follows is an external alignment that aim to evaluate compatibility and required adjustment to OEM business model, to achieve optimal dynamic efficiency and created value. Here, the internal and external fit between the innovated business model and that of the customer is evaluated though an iteration. Further, adopting an open innovation perspective to get feedback on alignment with appointed areas for change (Vanhaverbeke & Chesbrough 2014), while also to signal the attention given to the specific customer which will strengthen the relationship between actors. The aim is to align the business model to ensure compatibility, also to get input from external actors to increase value creation and success potential (Vanhaverbeke & Chesbrough 2014). This correspond to Geisen et al. (2010), who argue that one has to consider the importance of having the right business model to fit into the external environment.

With regards to performance enhancement it is crucial to comprehend the linkages found within the in business model, to ensure no changes provide negative outcome. However, there can still exist improvement from separate dimension adjustments for low complexity, with no additional required adjustments as the found performance or function difference is small (Andries & Debackere 2013).

4.4. Phase 4: Adaptability

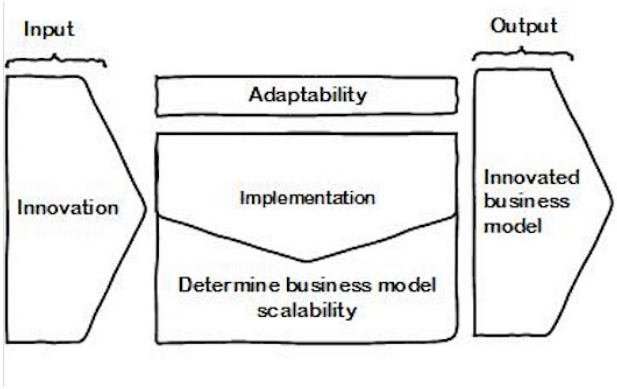


Figure 9: An illustration of the forth phase and respective sub-steps in the business model innovation process.

The fourth and final phase, adaptability, focus on the implementation of the new business model, thus the adaptability of the new model with regards to the existing, while further incorporating a discussion on scalability. The output is an innovated business model that is compatible with and based on a value chain perspective.

Johnson et al. (2008) argue for a comparison between new and existing model to determine upon implementation, where Casadesus-Masanell & Tarziján (2012) argue that it is possible to attain success in parallel business models. Still, one must evaluate compatibility between resources and capabilities from respective model, activities that can be performed in union, as well as similarities in the utilization of physical assets. The synergy effects between models should determine level of integration.

This phase also concerns the extent to which the business model is scalable into other markets or customer segments (Björkdahl & Holmén 2013), with the potential increase in revenue without subsequent increase in cost. The extent and what to scale should follow the implementation, as respective OEM contribute with sufficient revenue potential to motivate separate models is necessary.

Furthermore, in terms of replacing the existing model, Voelpel et al. (2004) discuss the competitive advantage that can be achieved from proactive restructuring, where he also address the notion of creative destruction, where one must be willing to allow for the destruction or cannibalization of activities, systems and similar (Voelpel et al. 2004).

5. Case Settings

This chapter aim to give an understanding of the current case situation and describes the business models, strategic initiatives and the selected customers for this study. The information is attained from interviews with company employees, if not otherwise specified.

Parker Hannifin Corporation, established in 1918, is a diversified supplier with a product portfolio of over 900 000 parts, within nine core technologies; aerospace, climate control, electromechanical, filtration, fluid and gas handling, hydraulics, pneumatics, process control and sealing and shielding. Parker Hannifin is active in 50 countries with 55 000 employees and reported sales of BSEK 13 during fiscal year 2015 (Parker Hannifin 2016a). The company holds a leading position in motion and control technologies and consist of 81 decentralized divisions with own performance responsibilities (Parker Hannifin 2016c).

Parker Hannifin Sales Company Sweden, a decentralized unit within Parker Hannifin Corporation, has been active in Sweden for approximately 40 years (Parker Hannifin 2016d) and has in total 167 employees with offices located in Borås, Malmö and Spånga. The company is primarily active in the industries for transportation, construction equipment, forestry equipment, material handling equipment, mining equipment, marine equipment, process industry, industrial equipment and life science. Moreover, the sales company is responsible for OEMs and distributers situated in Sweden, with a business environment characterized by global and fierce competition, mature and competitive industries. In response, Parker Hannifin SCS recognizes opportunities in industrial OEM, distribution and maintenance and repair operations.

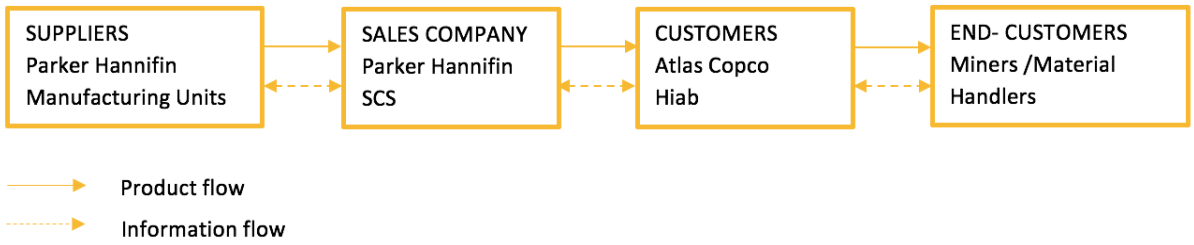


Figure 10: An overview of the general product and information flow in Parker Hannifin SCS's supply chain

5.1. Parker Hannifin SCS Business Model

This part will present the researchers interpretation of Parker Hannifin SCS business model, divided into three dimensions; value creation, value proposition and value capture. In addition, strategic intent is also described.

5.1.1. Value creation

SCS is a hierarchal organizational, where most employees have been working at the organization for the majority part of their career. The area of competence includes both systems and products, with core strength in hydraulics, since the company was acquired by Parker Hannifin corporation as a hydraulics supplier. Nevertheless, collaborations with the external Parker divisions enable access to expert competence from both manufacturing units and other sales companies. Furthermore, SCS has grown a large customer base from the extensive experience within the industry for hydraulics and automation.

In terms of internal and external information flow, SCS uses an intranet portal to share information on for example quality management system with standard works and process flows.

In addition, multiple portals linked to external Parker Hannifin units are accessible and facilitates an array of requests and inquiries within the corporate group, such as special transport and new product requests. Information on price or part specific changes are often shared per mail to selected functions within SCS, such as customer service.

The ERP system is modularized and has been extended to most acquired divisions, which enable SCS to access information from some, yet not all Parker. Although the transparency level differs, as do the degree of collaboration, it is for some divisions possible to view inventory levels, expected replenishments and similar.

There are several alternative set-ups for how SCS receive and process orders. The preferred method is through EDI, where the order is per automatic updated in the system and distributed to responsible manufacturing unit. An alternative set-up is through so called Phast, which is a semi-automated process built to imitate EDI. Traditional channels of mail and phone are also used to receive orders, where after they are manually entered to the system.

In case of requested value added services, SCS consolidate shipments from multiple manufacturing units, to avoid partial shipment, alternatively procure multiple components and assemble to one item. The procurement function is then responsible for sourcing components from respective division as well as production planning. Alternatively, purchases are made on drop-ship from respective manufacturing unit, or a distribution center, with direct shipment to the customer, or alternative provided address.

Matrices and performance are monitored to enhance customer satisfaction, such as delivery performance and oldest order. In addition, lean tools are used for standardization and efficiency. Further central activities to create value include those of customer service, project management, sales, product support, marketing, lean initiatives, business development, procurement for value adding services, as well as organizing vale adding services for customized assembly and packaging solutions.

SCS engage in partnerships to increase total created value. Within the external organization, collaboration initiatives with manufacturing units focus on cost reduction and pricing improvements. In general, the manufacturing unit is argued more knowledgeable in terms of pricing and thus supply a recommended price to SCS, which is used as a basis in part pricing, where SCS report back potential discrepancies in the market. In general, divisions accept low margin deals to scale production and achieve a favorable cost structure, later to add high volume deals on-top, which in turn impact the recommended price. Further, the external Parker network and distribution channel is used for local availability, to access expert competence, exchange product and application knowledge, as well as best practices. Additional collaborations involve expertise for customer specific projects.

Parker Hannifin resellers provides an external distribution network that consist of certified Parker Stores distributers, approximately 3000 locations spread across the globe. In addition, around 100 Hose Doctors, a complement to Parker Store with certified actors who are mobile and perform on-site service. Distributers are used for superior reach, to enable high quality service for smaller customers as well as enhance brand recognition from a marketing perspective.

5.1.2. Value proposition

In addition to the standard product sentiment, SCS offer value adding services such as customized part assembly solutions, where multiple sub-components are comprised and sold as one item to save time for the customer, or as a logistic solutions with complete deliveries instead of multiple partial shipments. Customized solutions, such as branding and customer specific component solutions can also be offered per customer demand. In terms of services, the company assist with design, technical solutions, commercial packaging, complete systems solutions and supplementary consultancy services. Additional offering solutions include on-site container, parfit, global core, renovations and Parker Tracking system (PTS). The latter is a solution to tag components for traceability to a location or asset, able to notify replacement or inspections.

In terms of customer benefits, the size and financial strength means that the company is professional in its operations and to a greater extent able to withstand economic volatility. In turn, SCS can be flexible towards customers with regard to terms of payment. Also, ethical, safety and environmental factors is taken into consideration, where products are certified in accordance with a range of industry standards, such as the quality standard ISO 9001. The benefit can be translated into a sense of security in investing in long-term collaborations. Also, all parts are original productions by Parker Hannifin, which gives process- and production control and reduces intermediaries, hence, provides a lower total cost. Continually, the high quality characteristics can also be of signaling value that can be used by customer in marketing and sales logic. Additional value from collaborations within the organization is the access to innovations from all divisions, within all technologies, as well as a broad distribution network, both national and international, which gives access to local resellers for technical support, repairs and maintenance (Parker Hannifin 2016e).

In addition, the customer is supported by a customer service representative as well as an account manager. As such, SCS is able to provide superior customer service as the responsible contact persons will learn the customers' business and can provide a personalized experience in accordance with needs and processes. Moreover, SCS focus on quality service and products, where delivery performance is key to maintain customers and create further business opportunities. SCS recently initiated a collaborative approach to the business plan, where the company attain feedback on focus areas, performance and the company in general, to set a base for mutual growth through activities that will benefit the customer.

The diversity in product offering make it possible for customers to source multiple products from SCS and reduce the supplier base, with the administrative benefits in terms of one communication path, synergies in price negotiations and meetings, as well as the financial benefit in terms of lower cost for administrative related task, procurement and time spent on supplier relationship management. Furthermore, SCS operate in three main markets; mobile, industry and marine. Within these markets, key customer segments are mining, construction, material handling, forestry, general industrial machinery, cars and light trucks, heavy trucks and trailers. In terms of target customers within respective segment, customers are classified into key, grow and regular.

In terms of sales channel, sales are either direct or through a distributer. When indirect, all business discussions and transactions go through the certified distribution network of Parker Store and Hose Doctor. Although the distributers are considered a channel through which SCS reach its customers, it can also be viewed as a customer segment in itself, where the benefit is the

support from SCS, as well as the size and reputation of the company. In addition, SCS has its own online website where customers can engage in direct contact with support function through email or chat forum.

Additional approaches to strengthen customer relationship include entering long-term agreements with acceptance of financial responsibility, projects to increase efficiency and productivity of customer's products with Parker components, as well as using a sales force of technicians and engineers where representatives speak the customer's language and establish trust.

5.1.3. Value Capture

The primary profit from sales goes to the manufacturing unit and the sales company receive a percentage rate to cover costs.

Product sales contribute to over 90% of total revenue, and as such constitutes the primary revenue stream. The poor contribution from services are explained by the choice to consolidate the cost of for example consultancy, validation and future service into product pricing.

In turn, the set-up of product sales varies between reoccurring sales based on part specific contractual agreements based on volume, give lower margins due to lower cost, projects with one-time payment, to high margin to cover high cost. One pricing strategy for standard products is list price with customer specific discount rate per product group, alternatively customer specific agreements. A common pricing strategy for the aftermarket is to increase pricing of parts after end of line-production, in accordance with a cost increase logic. Additional strategies include razorblade, where a part is subsidized for line-production, while charging a premium for the consumable on the aftermarket.

Furthermore, SCS have a cost oriented profit model, where metrics from top management are strict on a given maximum cost over sales. Cost of personnel is the largest component in SCS cost structure, contributing to 80-90% of total cost. This include salaries, travel expenses, overhead and other. Further, general cost also includes for example facility and marketing.

5.2. Strategies

Due to its success, the win strategy has been used as a framework since first introduced in 2001. With the vision "*engineering your success*" (Parker Hannifin 2016b, p.4), Parker Hannifin Corporation have four goals; engaged people, premier customer service, profitable growth and financial performance, with multiple supporting strategies for respective focus area (Parker Hannifin 2016b).

During 2016, agility though restructuring and simplification initiatives is emphasized. The company will focus on reduction in bureaucracy and revenue complexity, consolidate divisions and organizational structure and process optimization (Parker Hannifin 2016b).

For the goal engaged people, strategies focus on environmental, health and safety, entrepreneurial and high performance teams and leaders. Measures includes engagement survey, zero accidents, 80 % in high performance teams, inclusive environment and speed within win strategy (Parker Hannifin 2016b).

For the goal premier customer experience, strategies focus on quality solutions on time, eBusiness leadership and ease of doing business. Measures includes plus 98% on-time deliveries, six sigma quality, eBusiness conversion rate increase, best-in-class lead times and quote speed, over 30 likelihoods to recommend and customer dashboards. Moreover, *"greater emphasis on building an online experience that creates a destination point for the motion and control industry*" (Parker Hannifin 2016b, p.5). Continually, the eBusiness strategy will present novel opportunities for Parker Hannifin's customers in terms of enhanced understanding for Parker Hannifin's capabilities as well as services and products in line with customer needs, access to self-service, online order registration as well as product support (Parker Hannifin 2016b).

For the goal profitable growth, strategies focus on organic, acquisition and services, market driven innovation, system solutions, strong distribution, grow share and engineering expertise. Measures includes new products and systems sales increase, grow distribution and services with 50/50 distribution and OEM, first or second place in each group, plus 20% market share and "*organic growth 150 bps greater than the market"* (Parker Hannifin 2016b, p.5).

For the goal financial performance, strategies focus on simplification, lean enterprise, strategic supply chain and value pricing. Measures includes 17% ROIC, 21.4% RONA, 17% operating income, year over year growth in EPD, EBIT, cash flow and division net earnings and top quartile diversified industrial (Parker Hannifin 2016b).

A strategy focused on service, enabled by internet of things, Parker Hannifin aim to grow usage of online solutions across the technology platform, purposed to contribute value to customers in form of process optimization and improvements in safety and uptime. New service revenues will be created through implementing internet of things and other service solutions across the installed base of products (Parker Hannifin 2016b).

5.3. Description of prioritized customers

Atlas Copco MRS, part of Atlas Copco Group, and Hiab, part of Cargotec, are two prioritized customers, both with a long supplier relationship to SCS.

Atlas Copco MRS, Mining and Rock Excavation Service, is one of five decentralized divisions within Mining and Rock Excavation, responsible for service delivery, sales, support, marketing, and aftermarket for the whole business area. Further, the division provide value for their customers, where the main market is mining, through a complete offering of services and consumables related to mining and rock excavation (Atlas Copco 2016c).

With regard to the value chain, MRS source from both local and global suppliers. Also, they engage in long-term collaborations to improve efficiency and enable mutual growth, where key partners are selected based on quality, deliveries, technical competence and overall costs.

Hiab is a leading provider of global on-road load handling equipment and services. Continually, current product offering carry five product lines; tail lifts, demountables, forestry cranes, truck mounted forklifts and loader cranes, with additional offering of services and spare parts used in on-road transport and delivery (Cargotec 2016).

The majority of Hiabs customer base is situated in EMEA and span from small entrepreneurs to large international organizations, such as single truck owners, vehicle rental companies, truck manufacturers, transportation companies, fleet operators, municipalities and governments (Cargotec 2016).

From a value chain perspective, the selection, development and management of key suppliers aim improve competitive advantage and productivity (Hiab 2016b). Expected supplier qualities include financial viability, high ethical standards, competitive pricing, certifications, cost and cycle time reduction program as well as technological and/or service advantage over competitors (Hiab 2016c). Moreover, suppliers are selected based on quality, reliability, delivery and price, where law, regulation and human rights compliance are mandatory. However, for sourcing Hiab considers organizational conflict of interest, performance history, reputation, personnel experience, market niche, core capabilities, dependability, responsiveness, teamwork, geographic location, customer proximity, product/service offering and resource availability (Hiab 2016a).

6. Analysis and Discussion: The Business Model Innovation Process

Since SCS is a strategic supplier to MRS and Hiab, there is a dependency between actors as the business models to some degree are integrated. Thus, a change made at SCS can be argued to impact the OEMs, in line with Afuah (2014) argument that a change affects the complete dynamics. Continually, the same apply for a change in the business model of Hiab and MRS, which highlights the importance to align with the external environment (Giesen et al. 2010), as SCS will be impacted by the challenges, opportunities and competitive positioning of their customers.

Moreover, business model innovation is required when the existing model is rendered inappropriate, due to either change in, or newly presented customer requirements that leave behind unmet needs (Mezger & Enkel 2013). This goes in line with the findings for SCS, where changes in industry dynamics follow from key macro level factors and OEMs are found adjusting to the new climate, by for example directing focus towards services and the aftermarket. These changes serve as an external trigger where SCS must react and readjust to the new context, or risk inefficiencies that in turn may transform into business model obsolesce. Moreover, extensive literature within business model innovation address the many large corporations who failed to adjust during industry transformations, as previous competitive advantages became outdated. Put in the light of SCS, previous competitive advantage of high quality products is rendered obsolete by industry maturity and commoditization, which deteriorate margins in a competitive climate with lower customer loyalty.

Furthermore, as SCS are active in a mature industry a new business model presents the opportunity for competitive advantages (Clauss 2016). However, engaging to innovate the business model can be time consuming and expensive (Chesbrough 2007), as it is time and resource demanding. However, the alternative cost of business model obsolesce and inability to continue to operate in the market is much higher. To not embark on the declining phase of the lifecycle (Smith 2010), customers' relationship in mature markets are in particular considered as a source for innovation, as information on external changes from customers trigger business model change (Clauss 2016).

This chapter is covers the process application to SCS and analyzes requirements for the focal company to implement a proactive approach to business model innovation, by drawing on experiences to address challenges and benefits of how the process function in the contextual environment. Further, we expand on respective phase; assessment, analysis, alignment and adaptability, with inherent sub-steps, all purposed to reveal potential sources for innovation. Examples from practice are included to provide the reader with a clear picture of how the phases and sub-steps can turn out. However, the provided examples should merely to be considered as inspirational.

6.1. Phase 1: Assessment

In this phase we established a base knowledge on external and internal influences for SCS's, which in turn will lay the foundation for remaining phases. Furthermore, to ensure that SCS develop in favor to the direction of MRS and Hiab, we assess the macro and meso environment relevant to the aftermarket for mining and materials handling equipment, business models and strategies for Hiab and MRS.

External influences. In terms of understanding the information required from external influences, we observed that account management frequent mentioned key macro-economic factors in the context of specific customers during briefings and interviews. However, no information was accessible and shared within the organization, SCS does not have information on key macro developments nor market analysis material, within neither the internal nor accessible from the external organization. Some interviewees countered that such information had previously been the responsibility of application experts. However, since the reorganization there is no appointed responsibility, meaning that it is up to respective account manager to keep updated on developments relevant to their customers' situation. This indicates that SCS have the necessary competency to assess the information required in this phase. It is argued important to look into each market and development as it will present different result, as well as increase the probability to spot trends between multiple markets. To ease complexity in information gathering, the phase should focus on prioritized OEMs rather than the complete customer base. Still, SCS must have the resources and capabilities to absorb and derive essential information, as well as utilize the gathered data to identify opportunities, problems and trends presented by the external environment that require action.

Moreover, as the responsibility falls upon each account manager, the information is to a large extent attained from the concerned OEM. However, as the account managers are primarily in contact with the sourcing departments, with limited involvement from functions such as marketing, the value chain between SCS and the end-customer become extensive. From observation, this type of information shared at meetings is not discussed in-depth as it reaches the SCS organization, but rather mentioned in brief. Hence, to attain a further validated understanding of the holistic industry and macro developments, it is recommended to not solely rely on the information attained from the OEM. However, that would increase resources and time spent by each account manager to stay up to date on the external environment, in respect to their customer base, as no formal analysis coverage is accessible from the organization.

Further reactions from respondents on the matter included it was found strange that no market analysis were available within the organization, taken for granted to be done by account managers. This indicates that it is possible that employees do not sense the necessity of realizing information on the external environment as essential input to activities. Also, that external information lack in perception as a key source to identify opportunities, challenges and trends. Continually, the lack of incentive among employees require management involvement to communicate the necessity of formalizing such a process, which in turn will lower the dependency on the experiences level of an individual and the risk that essential information, now found as tacit in the experiences of employees within the organization. Further, to lower the risk that it is not passed on beyond the individual, team or function.

Moreover, some argued that it is possible to attain analysis material from the parent company, although no such information was successfully retrieved. Thus, the company should seek to leverage the resources and material that can be attained from the external organization, to maximize the use of resources spent on each sub-step. However, to eliminate the problem of not knowing what and where required information can be accessed, one should appoint accountability to someone responsible to establish necessary points of contacts to attain and continuously update the information material provided, so that it is easily accessed within the organization.

In terms of the macro and meso assessment, considering the little pre-knowledge when the process was initiated, it was rational to first understand MRS and Hiab, the industry for mining as well as materials handling equipment, latter to engage in the search for higher level factors. It was thus realized that a level of pre-conditional knowledge of the industries and operations of selected OEMs is required to guide the search for relevant information and attain a qualitative macro assessment. Hence, the structure of information gathering was in practice performed in parallel rather than in linear sequence, *see figure 4*.

Figure 11: Overview of how information in parallel is gathered for macro, meso and micro level

It was both difficult and time consuming to efficiently gather, manage and derive what was essential information for each case. The complexity came from the global business models of MRS and Hiab, thus for simplicity in this research, macro assessment was kept on a global level, disregarding of nation specific trends, *see example 1.* Further, the meso assessment and five forces framework for the aftermarket also required an initial understanding of the industry original equipment, as it is strongly correlated with the aftermarket performance.

To be noted, as this phase easily can grow in complexity with the level of attained data, the attention should be on deriving quality rather than quantity. Still, that does not mean that excessive or lack of data should be dismissed without first entering a discussion on the potential impact. To exemplify, although no clear substitute was found for mining equipment spare parts, conversing on the subject revealed self-solutions as a potential threat to MRS, and thus also SCS.

We argue that SCS can engage in a search that is similar to the one performed during process testing, *see example 1 and 2,* where the macro assessment was extended to include competing actors, to see patterns and key developments within the market. This way, the focus stretched beyond the OEM to understand the complete industry, rather than the single OEM. However, for SCS the PEST framework should be applied specific per each geographic market, as political and social factors will vary between countries. Moreover, we argue that SCS can keep efficiency in this step by first focusing on prioritized OEMs and key markets, where additional markets and customers can be given further consideration during the adaptability phase. Also, through a parallel and iterative search on macro level, where key factors are identified as relevant for respective OEM on a continuous basis as discovered. Further through applying purposed frameworks to guide the information search and simplify the phase structuring. In addition, for SCS well-experienced participants may have a greater absorptive capability of which the phase will benefit from such involvement and could increase the quality of outcome.

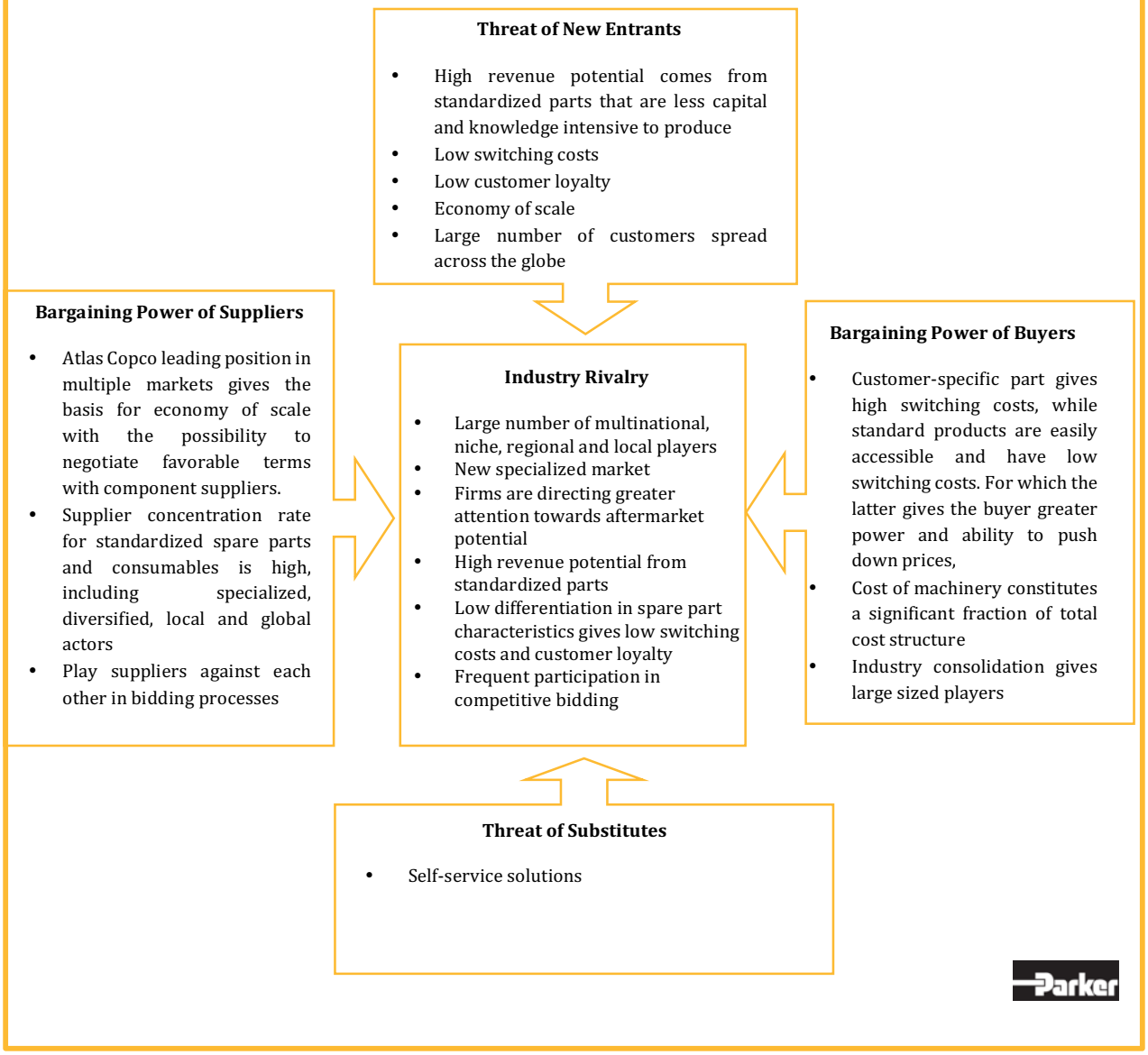
Example 1: ***Key macro factors relevant for the industries of mining and materials handling equipment.***

Political	Economical	Social	Technology
Energy efficiency and productivity requirements from industry (Atlas Copco 2015b)	Continued expansion in growth markets (Atlas Copco 2015b)	Urbanization drive investments in infrastructure and demand for mineral (Atlas Copco 2015b; Cargotec 2016b)	Connectivity (Atlas Copco 2015b)
UN Global Compact, for example human rights, labor and anti-corruption (Atlas Copco 2016a)	Drop in commodity prices (Atlas Copco 2016a)	Expansion of installed base	Digitalization (Atlas Copco 2016a; Cargotec 2016b)
Paris Climate Conference with focus on climate change (Atlas Copco 2016a)	Weak demand for metal and ore (Deloitte 2015)	Customers focus on core activity (Atlas Copco 2015b; Cargotec 2016b)	Automation (Atlas Copco 2016a; Cargotec 2016b)
	Low price for crude oil (MacGregor 2016)	Increased environmental focus (Atlas Copco 2016a)	
	GDP growth driven by improved productivity and population growth (Cargotec 2016b)	Growing middle class (Cargotec 2016b)	
		Change in consumer behavior with increased attention to logistics, environment and ethics (Cargotec 2016b)	
		Population growth (Cargotec 2016b)	
		Energy demand (Cargotec 2016b)	
		Consuming population (Cargotec 2016b)	

In summary, current macro development presents a rather positive outlook for Hiab, while the situation is more challenging for Atlas Copco MRS.

Source: (Atlas Copco 2015; Atlas Copco 2016c; Sandvik 2015; Atlas Copco 2016a; Komatsu 2015; Joy Global 2016; Atlas Copco 2016b)

Example 2: Industry dynamics within the aftermarket for mining equipment



Scholars emphasize of the importance of first understanding the existing business model for the company that attempt to innovate (Clauss 2016). Here, we argue that it is equally important to understand the business models of MRS and Hiab, as they are integrated into the business model of SCS. To be able to make this assessment, the challenge again surrounds the point of contact between SCS and OEMs. As previously noted, account managers are primarily in contact with the sourcing departments, it was difficult to include the necessary perspectives to uncover Hiab's and MRS business model. We recognized that with the current processes and customer contact points between SCS and respective OEM, the type of information shared between firms is primarily restricted to what can be attained from the sourcing function and perspective. For example, positive developments that proceeded the interview sessions with OEM are initiatives to for meetings between other functions, to increase transparency between firms. This clearly indicates a need to extend collaboration beyond existing customary meetings within sourcing and account management, to allow for better information flow and the ability to improve collaboration between OEM and SCS. Translated into this context, we struggled to attain a holistic perspective

of how OEM are organized, supported by Clauss (2016) argument that few employees understand the totality of a company's operations. This means that SCS may encounter the same problem of limited the view over OEMs business models. Still, the use of first order dimensions allowed for an aggregate analysis. In addition to the business model, rich data is required on respective OEMs specific challenges, strategies and goals with regard to the aftermarket, which demand SCS to engage in deep interviews with personnel in various positions for diverse perspectives.

A recent initiative from SCS is to prepare and presented the annual business plan for input on direction and current business. Although this is regarded as a step in the right direction, earlier involvement and co-development, where the plan instead is based on mutual input later to be formalized by SCS, can enhance quality of outcome. Furthermore, equal attention should be directed to attain feedback on current collaborations from the perspective of the customer, purposed to set a shared plan for continued focus areas, as well as the strategic aim and challenges and opportunities.

Many within the SCS organization argue that OEMs have strong requirements, either implicit or explicit stated, on all supplier meetings for the presentation of feasible contributions. One can observe a potential conflict between perceptions, where SCS feels complied to provide instant contributions, while MRS and Hiab rather expressed appreciation over the supplier engagement. Here, OEMs are appreciative of open conversations purposed to debate and identify aftermarket growth and capture rate possibilities. This align with Brem & Tidd (2012) view that it is more important to signal a willingness and the length to which a supplier is prepared to collaborate, instead of simply focus on presenting available technology. The change in customer behavior can be argued as a result of engaging in closer relationships with fewer suppliers.

Internal influences. It is essential that SCS understand the existing business model and linkages (Clauss 2016) so that changes are considered along with the effect they have on remaining dimensions. While the first order dimensions were used in the assessment of OEMs business models, a more detail view of the SCS was required, therefore the second level sub-constructs were used to allow for an in-depth understanding of what comprise respective dimension. This made it easier to uncover system connectivity as well as, in proceeding phases, engage in detail analysis of dysfunctional elements in relation to the external environment. Further, as individual employees were unaware of the inter-dimensional dynamics, the process will require a diverse team to understand the potential effect and required adjustments for successful innovation. Further, to understand that a smaller change within second level give a larger effect in the system, *see example 3 describing a new offering that can favor from this understanding*.

Example 3: Understanding the business model dynamics for novel service offerings

SCS begin to introduce a change within the value proposition dimension, by extending its offering with a service add-on, Parker Tracking System solution. Thus, the system of activities in remaining dimensions must be adjusted accordingly. In order to do so, SCS must be able to question and diverge from old logic that was created when the business environment was vast different. Also, be able to challenge the dynamics among respective dimension to achieve efficiency and create greatest possible value. Continually, in line with the argument by Neu and Brown (2005), the success will depend on what degree managers can utilize existing, or access new, resources and capabilities to deal with the changed conditions with regards to service business.

Further, initial assessment should be objective (Chesbrough 2007), and can in itself trigger ideas for smaller improvements. Even though we focused on objective appraisal to first fully comprehend the dynamics within the business model, it is possible that the same activity performed by SCS would be more subjective. Also, they may struggle to take the variety of perspectives from multiple functions into consideration, which were needed to attain a holistic perspective. In part, as the interviewees did not share the same perspective on all business model dimensions, the assessment need to be open to include all perspectives. To conclude, as we are external observers it may have been more easy for us to keep objective during the assessment than it is for SCS, which need to be considered.

However, although a range of interviews were held to attain different perspective and create a thorough understanding of how the existing business model is organized, it was difficult to attain a common picture of the business model. Moreover, aligned with the argument by Chesbrough (2007) that few are aware of all aspects of how company create and capture value, we recognized that interviewees had varied and to some degree limited understanding of activities beyond his/her own function. Further, it was common that employees during interviews chose not to answer questions that did not directly concern their function, and instead referred to the person they believed to be responsible. In addition, we also found contrasting views on the same activities. However, management expressed concern that the input varied between positions and functions, and that the majority of feedback should be consistent regardless of respondent. Even though, managers at SCS can be argued to have a better holistic understanding, as they get input during for examples top management meeting, their understanding does not necessarily reach all lower levels in the hierarchy.

Management is recommended to open up for a cross-functional discussion on how the current business is organized to shed light on interdependencies between function and activities, which in turn may put things into perspective and increase awareness within the company. The contrasting understanding was primarily found for the processes and collaboration with the external organization, which indicates that the complexity in collaboration structure lower the potential value that can be attained. Further, that SCS may not successfully utilizing the resources and capabilities found in the external Parker network. One can argue that a variety of employees should be engage in discussions while setting the frame for the business model before starting to innovate, in order to spread the holistic view of the organization. This can give ground to recognize improvement and inefficiencies across functions as well.

6.2. Phase 2: Analysis

In this phase we analyzed the contextual relationship between SCS and the external environment, based on the information gathered during assessment. Further, each sub-step is evaluated in relation to Hiab and MRS, purposed to find sources for innovation. Noteworthy, the introduced analogical reasoning concept is used in order to make sense of the assessed data and in a natural way of approaching problems and opportunities, that will help SCS to identify relational similarities and differences in order to address new ideas.

Previous discussions have attended to the necessity to gather information from the external environment. However, it is equally important to understand the developments and the effect it will have both on SCS and OEMs. For example, understanding that formalized global purchasing organizations and separate aftermarket functions are not just found for Hiab and MRS, but rather indicate larger trends, it is possible to appreciate that SCS ought to align accordingly, thus direct attention to the product lifecycle and diverge from the mindset where production and aftermarket are treated as separates. These realizations can set the stage for attentive adjustments that benefit both SCS and its customer.

Furthermore, in line with the argument on business to business service development by Neu and Brown (2005), that suppliers need to have strategies and organizational capabilities that fit in to the external environment, it is important to ensure that the business model development in which SCS engage is in line with the customers, and thus so the external environment. Although SCS do address service in the win strategy, which favors for a more service-driven business model, we have not found initiatives that have significant effect on the current business model, other than introducing a new position focused on aftermarket development into the organization. The recent focus signals a step in the right direction, yet require a more holistic perspective and engagement within the whole organization. Nonetheless, the business model is still to more than 90 percent driven by product sales, which has to be changed in order to get a more service driven approach and align to customer service focus.

The macro environment should be examined as to how it affects the industry dynamics within the aftermarket for mining and material handling, *see example 5*. Also, how the MRS and Hiab respond to the development presented in external environment. Here, the essence is about fully appreciating how the macro factors impact the industry and how the change translates to MRS and Hiab, and thus also SCS. In turn, to make such connections, SCS must have the competences to grasp the dynamic relationship between macro, industry and the firm. With consideration given to the extensive experience and the higher educational background found at the majority of employees, with account managers who are accustomed to use tools such as SWOT during business plan development, indicates that SCS possess such capabilities. Further, the close collaborations between SCS and prioritized OEMs allow for a deeper understanding of the customer context, in particular within the hydraulics area. However, the capabilities may be spread across function and could favor from interaction, where a formal process can enhance the quality of made connections through diverse perspectives. Still, even though one can reason for a more absorptive quality thanks to an understanding for the technical, systems and application complexity, it may also lead to that factors, such as behavioral trends, not instantly recognized as relevant potentially can be disregarded.

At the time of the information gathering for the external influences in the assessment phase, the analysis naturally occurred in parallel. However, it was still necessary to engage in a deeper discussion to allow for connections that were not per automatic discovered. As for SCS, this indicates that the current structure, where each account manager has the individual responsibility to create his/her understanding for external environment, miss out on connections not directly inferred.

Example 5 - Macro-economic impact on the aftermarket for mining equipment

The prevailing tough macro-economic conditions has resulted in a challenging industry for mining industry. Supply restrictions and drastic reduction in commodity prices, particularly that of metal and ore, negatively impact mining companies' profitability, resulting in industry consolidation. Service and mining equipment investments are directly affected, with limited investment in new machinery, strong focus on productivity and cost reduction. To maintain competitive positioning in mining or mining equipment, firms approach overall efficiency and price competitions, as cost of machinery constitutes a significant fraction of total cost structure (Atlas Copco 2016a). Moreover, loyalty deteriorate as large customers build sophisticated procurement departments, in part as a consequence from industry consolidation, where Atlas Copco to a larger extent are benchmarked based on price.

Atlas Copco reported of continued stable demand for spare parts and services during FY 2015 (Atlas Copco 2016a), where OEM's direct attention to services and the aftermarket to level revenue streams. In addition, OEMs exercise buying power onto suppliers and transfers the same pressure down the value chain. Further, the trend of supplier base reduction gives opportunities for larger order volumes and thus increases supplier pressure for strong business cases, where loss of share will have greater impact on the total revenue stream for suppliers.

Further, digitalization makes it easier to enter the market, in particular for sales of standard parts. Traditional high margins and previous advantages of strong distribution networks as well as economies of scale and scope are challenged by new entrants that diverge from traditional industry practices and operating through ecommerce platforms. Continually, ICT developments enable information accessibility, where the customer more easily can locate alternatives, and cost reduction through operational efficiency with favorable cost structures. In addition, customer behavior change and to a greater extent demand for information availability with instant response and delivery, where there is an unwillingness to wait for anything.

OEMs approach the general low capture rate through lock-in initiatives, such as branding and increased focus on service offerings. In favor of suppliers, customized products create lock-in and must be procured through single supplier, where branding initiatives and additional value adding activities increase customer-supplier dependencies. Continually, one can reason that these developments, complemented with the trend of closer supplier and OEM relationships, will smoothen the bargaining power between supplier and OEM, while strengthening the power against customers and new entrants.

We would recommend to continuously update information on the external perspective, in order to notice change in customer behavior and the impact it has on SCS. Moreover, utilizing the external environment with an open approach to find innovation sources further enable SCS to find new ways of doing business, sharing resources and create lock-ins. It is important for SCS to understand the importance of cooperate, share resources and capabilities, both their own but also together with the customer. Equally important is to make the customer willing both engage and invest resources into collaborative work towards business model innovation, which favor from increased transparency in approach than what is found today. To exemplify customary sales logic, in a business case for a patented filter solution with substantial potential to increase aftermarket capture rate on filter elements, a high margin consumable priced with the razorblade strategy, within the aftermarket, sales arguments included the long-term revenue potential for OEM as the replacement part is not possible to purchase from a competing actor. For the solution to function, complete filters must first be installed in production. Again, this exemplifies the difficulty to diverge form old logic, where parts are priced based on cost, thus sold to the customer at a slight higher price than the standard option, putting sole emphasis on the benefit to the OEM. This require management support to establish a network perspective where diverging from self-interests and show willingness to make mutual short-term sacrifice for long-term benefit. As production scale in line with number of units out on the market, aftermarket will increase accordingly and after several years reach a cost structure that is equal to or probably lower compared to that of the standard option. Similarly, as the patented solution is determined to ensure 90 percent capture rate, a substantial increase, SCS will increase sales accordingly as well as create a lock-in for the OEM. The lack of transparency in business cases like these will create distrust and harness the relationship. Instead, management at SCS must speak in favor of acting in a way that serves both interest for successful long-term relationships and decrease the possibility to be invited to competitive biddings, but rather be inquired as the first considered option, where the customer is aware of the transparency.

Connected to Friedrich von den Eichen et al. (2015, p.33) "*Openness is always a matter of the general attitude within a company and the values set and exemplified by top management".* Here, empirical findings on the matter show a strong willingness from management to understand external developments, with an eagerness to act on revealed opportunities, where the discussion currently surround how to approach the changes seen at their customer. This provides high signaling value for lower hierarchal levels, favoring business model developments.

As for the firm compatibility, SCS should oversee the business model and the strategic intent to see if it is either aligned, alternatively supportive of those announced by MRS and Hiab respectively, *see example 6*. The importance is that SCS understand the customers' business model and strategies, in order to work in the same direction. Further, the compatibility will set the foundation for successful collaborative relationship towards innovation, which is supported by the Brem & Tidd (2012). We argue that SCS should engage in discussion with respective OEM, to have an open conversation about the perspectives on the current relationship between business models, with elements that function well or should be improved to increase efficiency and combined value creation. Furthermore, SCS is urged to take on a both inside-out and outside-in approach to open innovation (Chesbrough & Bogers 2014), where an example of inside-out goes in line with customers demand, as per below quote. The quote concerns a software solution introduced into SCSs offering, and a customer respondent's view on how a supplier can contribute to OEM development.

"I believe a supplier can propose new concepts, as with Parker Tracking System for example, because from our perspective it is not possible to come up with such a thing, but you can if you are just sitting on the component. "

Aftermarket gain attraction at OEMs, where the function will have the ability to impact what is included already in production and product design. This creates the opportunity for Parker to focus on both units and assist to establish a solution as early as possible to increase profit potential throughout the lifecycle, thus possibly pull strings to include aftermarket functions when not already involved. For examples, initiatives to increase capture rate which require production involvement for initial instalment. Arguably, these initiatives will have a positive effect on profit, as long-term revenue potential is found in the aftermarket. It will also have a positive effect on customer relationship, especially when the customers have decentralized organization for service and aftermarket, such as MRS, or as experiences are increasingly exchanged and documented within new global purchasing organization.

Example 6: Strategic compatibility

The recent focus on eBusiness, internet of things and services correspond to both OEMs investment in connected machinery, where SCS can provide support in terms of part connectivity. Also, web process developments, aimed at process optimization and customer experience improvements, is beneficial for information exchange between firms as it contributes with better information accessibility and communication in form of for example RFQ, chat and orders. However, the strategy of eBusiness leadership from SCS can be discussed as potentially diverging from OEMs points of interest, where OEMs have the same strategic intent, thus potentially inferring direct competition between supplier and customer. Similarly, the strategy deployed to grow the distribution channel can be discussed as both positive, complementing the strategic focus of increased local presence of MRS and Hiab, yet also potentially negative where SCS to a greater extent invest in direct competition though its own distribution channel.

In line with the argument Smith (2010) for how mature firms can find inspiration for novel solutions to industry problems, cross industry search is a suitable method for SCS to induce inspiration on how to approach problems and opportunities revealed at assessment. Thus, this approach is recommended as it can enable SCS to differentiate themselves from other actors, by identifying solutions that not are widely used in the industry. Yet, in order to do so, it is recommended to follow the logic by Mezger & Enkel (2013), and breakdown identified problems into a concept that is not bound to product or industry characteristics, *see example 7*.

Example 7: Problem abstraction for 3D in cross industry imitation search

The global business model of respective OEM is challenging near-customer presence and distribution responsiveness in areas of limited reach, in particular for non-stocked items such as large steel structures in the case of Hiab. In further detail, MRS's product specific DCs impact distribution time, while Hiab experience limited reach in market expansion, in particular so in the US. In addition, complex sourcing routes follows as consumables are directly sourced from suppliers. Challenges were abstracted into '*flexible distribution and lead-time*', which inspired an analogy to Unilever. Through implementing 3D printing, also referred to as additive manufacturing, the firm have accelerated product development and prototyping through, thus speeding time-to-market (Stratasy 2015).

Parker

Although the search stretch into unfamiliar contexts beyond SCS and its customers, it can trigger association through recognized similarities between the source domain and that of SCS, based on the logic of selective attention, which in turn be used to change accustomed activities and structures. Continually, a method for structured ideation is required to be able to continuously work for business model innovation, where the benefit in using cross-industry search is the ability to go beyond best practices and identify potential disruptive approaches from other industries, while the probability to overlook key trends outside industry is significantly reduced. However, it requires an openness to move beyond current focus on for example lean philosophy, as well as the ability to focus on solutions that are developed externally to SCS or the industry. Similarly, during interviews it was expressed an interest in how other actors work with specific activities, such as e-commerce, indicating a willingness to extend the search to new domains.

Moreover, SCS should then be able to access and captivate external information (Mezger & Enkel 2013) as well as to approach a context that at first sight may seem unconventional, still able to recognize attributes that in part or complete can reapplied (Martins et al. 2015). Here the importance of realizing the abstracts and team diversity once again comes into play, where there may by a need for knowledge base expansion on an individual, team and organizational level to incorporate additional competence areas, which becomes a discussion for Human Resources, as the analogues uncovered are founded in the experience and knowledge of participants. Further, diversity is not limited to experience within SCS, instead experience prior to their employment should also be considered. As such, SCS can improve the ability to access external knowledge, where the broader understanding of the context, namely product, market and other elements, is equally important to be able to manage the information with reapplication in the target context. An additional difficulty is to limit number of source concepts and process information gathered inspiration for evaluation. By iterating between search for sources and evaluation thereof, which to a great extent occur in parallel, it is possible to efficiently manage the information and structure the search. Further, the search often went into other's solution possibilities as well, address similar challenges/opportunities. This in turn can be argued as an inspiration to combine the different solutions into one, where to adjust the ideas of different industries into the specific context.

In the first sub-step, innovation applicability, the sourced concepts from previous step, cross industry imitation, must be evaluated for replicability through careful consideration to SCS and external transfer. Further, one has to determine the elements that make the source concept successful in its natural domain to really understand what to incorporate. Also, have the ability to modify the concept so that it will fit into the context of SCS, which require capability to detect similarities between analogy to target.

6.3. Phase 3: Alignment

In third phase, alignment, we evaluate the applicability to the internal and external context of SCS, as well as the necessary business model realignments for implementation of the inspirational solutions from previous step.

After having touched upon how to find sources for innovation, SCS must evaluate how to derive optimal benefit from incorporating the source into their business model. Also, for SCS to be able to innovate their business model at all, they must be able to change. Connecting to Smith (2010), financial strength, strategic decisions and leadership are essential for mature companies to enable growth and increase market share (Smith 2010). However, in recent strategic decisions SCS were fast to react to below budget sales and adjust to the business climate by introducing short-weeks to reduce cost of human resources, the primary cost element. This type of management action indicates that priorities are driven by cost and short-term results, disregarding of the long-term effect, for example in this case a lower customer service level with negative effect on customer relations. According to Smith (2010), the change is argued dependent on the ability and willingness to change new- or existing resources, alternatively acquire external technologies and entities. In relation, although SCS argue to be financially strong, the company should also be willing to change and invest resources into long-term prospects, diverging from the current cost driven logic. As stated by Chesbrough (2007, p.17) "*If this sounds expensive and time-consuming, it is. But the better perspective is to evaluate the cost of competing in the market with an obsolete business model, against other companies who made the investments and took the risks to innovate a superior business model. Seen this way, investing in business model innovation is money well spent.".* Furthermore, in line with Smiths (2010) argument that eventual lack of shareholder support can restraint the ability and freedom to change, minding that the parent company is listed on the stock exchange, additional attention from SCS should be directed to marketing communications efforts.

As found, current new development and adjustments within one of the business model dimensions' focus on either OEMs or distributers. The organizational mentality becomes that the one will have to adapt to the other, disregarding of the inefficiencies or friction that is created between channels and customers. Relating back to previous remarks on the business model as a system of activities, it is essential that SCS to understand the affect a given change will have on respective dimension, so that the total business model dynamics can be optimized. Also, following earlier discussion on restricted cross-functional view during business model assessment, to create an internal alignment, SCS have to consider engaging in a broader organizational discussion and open of for feedback that incorporate diverse perspectives. Just as for uncovering the existing business model during assessment, SCS can structure the discussion, workshop or similar, around the second level sub-constructs as a means to reason around impact and spur creativity for optimal business model design.

It is also essential to be able to prioritize potential innovations. With no formalized process for project management and selection at SCS, the risk of premature dismissal increases. In particular considering the argument by Chesbrough (2010), that information that diverge from existing logic is dismissed. Although the process is now under development at SCS, additional parameters to take into account the characteristics for business model innovation, other than standard sales driven projects, can benefit the ability to absorb and act on novel ideas and solutions. Also, to ensure that prioritizations are leveled between short and long term perspective.

A challenge in the seemingly strong rooted product centricity, found at both SCS and the external organization, where an argued outdated logic is deployed between in the collaboration between decentralized Parker units. For example, in regard or pricing of parts, the manufacturing units provide SCS with recommended prices, which are often followed although they argue to have authorities to decide otherwise. As found during interviews, the reasoning followed that manufacturing units are perceived as more competent since responsible for production, where after SCS inform concerned unit in the event of considerable market discrepancies. The logic implies an organization culture more closed than open with regards to customer collaborations, where we instead would argue for SCS as prime responsible for pricing, as the company receive feedback from both customer and market. Also, being the one in direct customer contact with a view over all active business deals, thus further able to recognize and realize long-term possibilities, with a perspective on total benefit rather than single contractual agreements. Also, a mindset where parker units are viewed as partners and cooperate to the mutual benefit, over isolated profitability gains, for which SCS must work to align incentives.

In the event of a business model change, it is not just the dimensions that require realignment, but also the general sentiment within the organization. We argue that this will require attentive influence over employee mindset for adjusting everyday activities. To exemplify potential misalignments in incentives if not attended to, as found with regard to customer service at SCS, there is a possibility that the employee mindset is influenced by the emphasis of substantial costs that arise in the event of line stop, which may result in matters connected to OEMs production units treated with higher urgency. However, the aftermarket functions emphases the necessity of high performance on cost, delivery-, and response time, all critical for their success. If the OEM for any reason do not perform on these factors, there is the risk of immediate impact on end-customer, for example through high cost of stand still. As a result, it is likely that the end-customer choose a different supplier, where in turn the OEM risk loss of sales and even permanent loss of the customer. From a long-term perspective, this cost can be argued higher than that of production standstill, and should thus be communicated to be of equal urgency. Further, the general over-representation of discussions related to production between account managers, may unconsciously influence employees to put greater focus on just that. Here, it is essential that management incentivize and communicate the necessity of directing focus towards aftermarket and services. Connecting to Smith (2010) who argue that a change requires that the firm to encourage, recognize and reward input from all organizational levels, and that human resources are utilized with regard to experience and expertise.

To act on an innovation opportunity SCS must consider what resources and capabilities that are available within the organization, alternatively what can be accessed from customers, the external organization or other bases, and what have to be acquired as new. Significant opportunities in terms of access to complementary resources and capabilities are presented in the external organization.

Similarly, we have found the existing collaborative relationships to be limited, where other units mostly are cooperated with for product expertise on development projects and similar. For example, global reach and distribution through the external organization should be leveraged to respond to OEMs challenges in terms of limited reach. Even though SCS emphases the access to these resources, they do not fully leverage the potential. Thus, the company must carefully evaluate what and how the complete value chain can be utilized to increase total created value. Arguable, close collaborations for a strong value network is a source of competitive advantage with superiority in value creation. However, it is found that there is a difficulty and limitation to the knowledge of what and where resources necessary is accessible, and could thus benefit from coordination activities. Furthermore, SCS should to a greater extent leverage partnership in external organization for resources and capabilities. For example, to leverage the new positions that focus on internet of things, services and similar, further use of financial stability to enable for opportunity to try new models. Hence, employ a mindset that aim to co create, co-develop and perform as a network to deliver highest possible customer value. In addition to the external organization, SCS should continuously search for partners that can assist in business model development.

SCS's hierarchal organizational structure require management support that understand the necessity of innovation and having decision making on right level. As been observed, a large quotation to a customer need be accepted on a higher level in the hierarchy. Furthermore, this may impact which ideas that successfully are implemented. A suggestion is that decisions are taken on the same level as the idea is generated, which is supported by Neu & Brown (2005) who argues that is appropriated due to mangers at a lower level are closer and do better understand the real situation and what strategies to use. However, the authors talk of understanding customers need for service, which in turn can be connected to SCS efforts on change. In order to make a successful transition, from a predominantly product-oriented company to expand the service offerings, Neu & Brown (2005) argue that strategies have to go aligned with the change. Further, organizational capabilities such as management potential and decision-making abilities need to be on the right level. As SCS is a complex decentralized organization one has to consider the fact on letting decision making be accepted on a lower level in the hierarchy. Furthermore, the external environment has to be aligned with the new service offerings, found in the value proposition (Neu & Brown 2005).

Furthermore, SCS should consider which and how activities must be adjusted accordingly, as aftermarket and service revenue become increasingly important and grow in priority at OEMs. Here, neglecting to alter these activities will have a negative effect on the partner relationship. For example, SCS could adapt similar priorities as its customers and align with the aftermarket development focus, which also should be reflected in offering development. There is potential to initiate consolidation of sourced parts to reduce the high number of purchased items, which would be to the benefit of both actors through increased scale and more simple planning environment. This will give a favorable cost structure and the possibility to offer more competitive prices to the end-customer. Further, a clear indicator of the remaining production focus is razorblade pricing strategies, where the price for production parts are substantially reduced, whereas consumables to the aftermarket are priced higher. This was previously viable as OEMs simply priced accordingly and were still able to attain high margins. However, as the perceived value of a product is the same regardless of production cost for the end-customer, this can have a negative effect on the relationship to OEMs.

Example 8: 3D Alignment 1(2)

The analogies found in the cross industry imitation search must be evaluated to determine applicability into the context in which SCS operate. The focus is now directed to the elements that make the concept successful in the source context, as well as consideration to context dependent structures that is separate in the case of SCS.

In the 3D printing used by Uniliver, the close similarities enable direct ability to associate benefit potential between the search and target context. The source is reasoned applicable to address multiple challenges, both in the event of reach, on-demand delivery in case of break down, and in particular to produce obsolete parts. The use of 3D printing is argued to have a high number of feasible areas of application.

The ability to *consolidate multiple components* into one complex part can have a positive effect on both inventory levels, with less need to store high number of items, and transportation. If used in *development project*, either collaborative or internal, the company can speed up the process and decrease time-to-market, thus possibly improve innovation pace and increase customer satisfaction in terms of fast action and high level of efficiency that save time and cost for all involved parties. Further, depending on use, 3D printing may be more *environmental friendly*, with lighter and fewer parts to transport, efficient and less energy consuming printing process compared to traditional manufacturing, and less waste in form of scrap material. On that note, the use can possibly be of benefit for parker in terms of signaling environmental awareness and innovative in their approach, the relationship to customers who emphasize environmental x, as well as for the general public. Continually, the SCS will be able to offer *custom parts* with exact fit to a lower cost. Substantial benefit can be found in *inventory reductions,* in particular in terms of low frequency parts currently stocked to maintain a high service level to customers, with regards to inventory levels at both Parker and its customers or distributers. Moreover, *on demand spare parts* in the event of breakdown can increase customer satisfaction levels and loyalty. It can further be used to produce and assist with a temporary solution in case of delivery delays.

In terms of materials and item sizes, use is recommended for items where needed materials is accessible and manageable for current technology. Consideration must also be given to item size and production feasibility. However, potential benefit may also be found in partial produced items that can upkeep productivity in equipment while awaiting spare part delivery.

The affect and required alternations to the system of activities depend on the type of solution. For example, on-demand spare parts can be priced according to requested delivery time. While it could also be considered a service add on, where part is priced the same, in line with the function it fulfills for the customer. If SCS were to start in small scale for e.g. Hiab, one should first consider customer willingness to pay and OEM requirement for optimal benefit. For example, viable channels to use could be Parker distributers in the US where Hiab lack reach. Further, to track sales of Hiab parts through the distribution channel from data logs monitoring with marginal pricing to customer. In terms of customer relationship management, it is important that Hiab would not to feel threaten by vertical integration.

Continuation of example 8: 3D Adaptability 2(2)

SCS should leverage resources found in the external organization and partner with manufacturing units and Parker Stores to increase reach. However, this would require to overlook the existing organizational structure, where the current profit to a large degree is captured by manufacturing firms. Management should promote the mutual benefit of cooperation. Also, as Parker Hannifin focus on growing the distribution channel, introducing 3D printing at selected distributors could increase service level and possible both Hiab and SCS retention rate. In terms of processes, it would require a new procurement process for different type of raw material. Possibilities are found in volume consolidations for the Parker group, to gain scale and the possibility reach favorable supplier terms with lower cost of material.

Interestingly, the solution presents the opportunity for a new revenue stream through sales of drawings, with high margin potential. For example, through a easy to find portal with subscription model for recurrent revenue for software access, or low fee for per single use.

6.4. Phase 4: Adaptability

In fourth phase, adaptability, we analyze SCS ability to implement a new business model, a matter that befalls revealing and evaluating an innovation opportunity. This is key not to become caught in to a pure ideation process, as the benefit from an innovation will derive after implementation rather than the idea itself.

Current actions to business model development includes focus on efficiency and lean principles, where connected to the argument by Andries & Debackere (2013), changes are incremental and of low complexity, and can thus be executed in further isolated dimensions. However, a different approach will be required for larger changes, which in turn may result in innovation. Relating back to that management at SCS have a holistic perspective on current operations and the primary responsibility for business development, the decision should arguably be up to top management. Further, as they have indicated an awareness of the necessity as well as willingness to act on new opportunities*, as expressed "feel the necessity of taking on a proactive approach, prior to directive from Parker, but do not know how to do it",* investing resources into aftermarket development, to find now solutions, while also further engaging with universities.

Johnson et al. (2008) argue that core models prevail through metrics, rules and norms within a given organization. For example, as found at SCS strong focus on cost against sales from top management indicate barriers for new models. Both for piloting and scalability, this must be considered so that first, an opportunity is not disregarded solely as a result of contrasting existing structures and second, that a model is considered for scale although it may require alterations to or cannibalization on current logic.

Further, implementation can either replace exciting business model or execute multiple models in parallel. The decision should be dependent on the characteristics of a given opportunity and if it complements with synergies effects or contradicts existing.

Also, must determine the level of generalizability in customer characteristics, of to what degree it can be adapted going in to other markets. Connecting back to previous examples on 3D printing, *see example 8*, scalability is argued dependent in item characteristics as well as the material and function of part. However, further consideration must be given to the wants and needs of OEMs in respective segment, where willingness to pay, feasibility and perceived threat of vertical integration are a few key factors**.**

One can also discuss the risk to disregard adoption, as research indicate increased usage with possible new identified application areas. Still, with consideration to the scale and structure of SCS, it is recommended to start in small scale to track benefits, which in turn can be used in discussion with the external organization. A potential concern is the risk for prematurely dismissal, as the company is managed on a cost per sales approach.

In terms of scalability, SCS must have process, technology, staff and customer feedback to assess feasibility of business models. Still, SCS must consider how to enable an emergent model to exist in interdependences until it is large enough to scale for greater profitability. However, at a certain point in time it is possible that the firm will have to allow cannibalization on previous business not to inhibit the transformation. This will to a great extent become a discussion on organizational culture, *see example 9.* One should discuss criteria's for when to scale, as well as to what extent. Furthermore, additional support needed in order to make an idea feasible to SCS, could for example need supportive data and management. Still, the company is urged to try new models though iteration, where one have to consider how to divide business model until the decision to up-scale. Considering the level of diversification of SCS, one has to consider the possibility to have different business models in different segments, aligned with separate customer's needs.

Continually, Bucherer et al. (2012) argue that implementation can begin with a unit or target market, where piloting is central to the business model innovation process and can entail for example a geographic selection or customer. This indicate that prioritized OEMs thus presents a suitable start to SCSs organizational implementation, to continue to monitor the success and later scale if indication of successful. As strategic focus is directed to closer collaborations, this will allow to attain feedback from customer as well as ability to monitor success. Also, during interviews and observations, OEMs were found curious to the collaboration between SCS and other large actors, where if successful and trail in one segment, more customers are likely to get attracted. That is, the new model can serve as an alternative to customers during pilot, while in order to scale one must also consider the elements to be adapted to new customer segments and geographical markets, for example channels, information and distribution flow.

When executing parallel business models, it enables SCS to go back to a previous proven model if the new is confirmed unsuccessful. However, if both models are shown valuable in separate segments, which according to interviews is probable for SCS with consideration given to the different characteristics in markets and customer segment, the aim becomes not to replace a business model, but rather to operate in parallel. For example, SCS must still consider to the approach to the distribution channel distributers, which requires different way of operating to efficiently address needs or segments contrasted to OEMs. Furthermore, in the case of SCS, this could require a structure of executing business models in parallel, and will further favor the possibility to introduce a new function responsible for new supplementary activities and reduce internal competition or inefficiencies.

If one instead addresses the possibility of a radical business model innovation, it is likely to contradict the existing, and should then replace the current. The difficulty found to act on such radical change is the resistance within the organization and control from Parker Cooperation

though performance measures. Nonetheless, here SCS must be willing to cannibalize existing business model, as it may turn current competence invaluable with a requirement of new. However, this may also concern when acting on innovative solutions that create tension between the two channels, e.g. if the OEM segment cannibalize on distribution. The difficulty is reasoned to emerge not to result in internal competition, where segments and channels are managed by separate teams, or new pricing strategies creating friction towards the external manufacturing units.

Example 9: Organizational culture

With regard to customer service at SCS, there is a possibility that the employee mindset is influenced by the emphasis of substantial costs that arise in the event of line stop, which may result in matters connected to OEMs production units treated with higher urgency. However, the aftermarket functions emphases the necessity of high performance on cost, delivery-, and response time, all critical for their success. If the OEM for any reason do not perform on these factors, there is the risk of immediate impact on end-customer, for example through high cost of stand still. As a result, it is likely that the end-customer choose a different supplier, where in turn the OEM risk loss of sales and even permanent loss of the customer. From a long-term perspective, this cost can be argued higher than that of production standstill, and should thus be communicated to be of equal urgency. Further, the general over-representation of discussions related to production between account managers, may unconsciously influence employees to put greater focus on just that. It is essential that management incentivize and communicate the necessity of directing focus towards aftermarket and services.

7. Discussion: From reactive to proactive.

One can discuss the pros and cons of a formal structured process to approach proactive business model innovation, where the required investment in proposed process can become considerable depending on the outcome. However, the organization can choose to structure a selection of sub-steps, while others left with further flexibility to allow for iteration. Here, the ideation to reveal opportunities is more easily structured than proceeding steps, yet we argue for the necessity to control that presented opportunities are acted upon, which favor continued formalization as well. This with consideration to the findings that currently account managers are primarily responsible for business development, however, struggle to pursue the necessary activities as constraint by time, resources and performance measures. A proactive process, may help to release the pressure on this task, while at the same time ensure that the development process attain focus, as management expressed difficulty in knowing how to approach business model change.

As of current, SCS have processes for both operational efficiency and product development, yet there is no process for business model development. Interestingly, the outcome and efficiency of two first processes are highly dependent on the latter. As a result, the business model lay outside of any appointed responsibility, left to evolve with no further consideration as to how. As found in analysis, changes in the external environment without accordingly readjustment of SCS business model has resulted in inefficiencies. In part, one can discuss the changes seen within or surrounding close collaborative partners, for example MRS and Hiab, where previous logic structure of system of activities become increasingly incompatible. SCS shifting focus onto the current business model, from a value network perspective, the organization of dimensions and sub-constructs can be argued to dis-optimize the complete dynamics resulting in inferior total created value. Since the strategic renewal, considerable focus centers around the product. As the strategy is pushed down from the Parker organization, we observed that some employees failed to realize how the increased service focus translate to SCS, but also to their activities. Further, one can argue that targets aimed to establish new or more durable sources of revenue would to a greater extent align with the purpose of achieving a service driven business model, to become less reliable on the current one-time transactions that dominate the revenue model, yet this is not found among the articulated strategic aims, nor in the sales and collaboration approach with customers.

Nonetheless, the new introduced focus areas in Win strategy signal top management awareness of required adjustments to a changing climate. Still, one can reason of the probable organizational inertia where deep-rooted structures inhibit the ability to change, *see example 9*. Thus, to break free from industry recipes, specifically an accustomed industry logic of value creation, proposition and capture, SCS should introduce a structure to be able to spot sources of innovation and deploy a proactive rather than reactive approach.

Furthermore, SCS should act on the opportunity of new technology, for example in line with discussions in 3D printers and data analytics. Further, continue to make internal process improvements and attempt innovative solutions where accustomed processes are addressed and changed as needed. Also, to a greater extent introduce offerings that focus on services and collection of products, such as customized solutions for logistics, delivery, branding and kits, as well as increase capture rate through lock-in initiatives.

The literature review on business model innovation predominantly focused on the context of business-to-consumer. On that note, there are differentiating factors within the context for SCS that need additional consideration. Being a sales company the firm is much dependent on the

external Parker organization, for which it facilitates a value flow between customer and manufacturing unit. Moreover, additional consideration must be given to the value created for the end-customer, as well as understanding the market in which the OEMs are active, where sales decline or incline will directly be reflected on the OEMs purchasing volumes from SCS. Thus, applying an open perspective to innovation with the view of a collaborative initiative to enhance total value creation within the network, is imperative. Of particular importance in this context between SCS as a supplier to the two customers, where the compatibility in regard of culture, business, strategy, approach to and perspective on innovation is key for a collaborative relationship (Brem & Tidd 2012). Further, as SCS have established close and long-term partnerships with a level of business model integration to that of prioritized OEMs, they have increased their potential to create greater value. Moreover, it presents the opportunity to utilize resources and capabilities from both actors for mutual development, which is reasoned to improve the quality of outcome, for example by reducing or preferably removing information asymmetries. In addition, isolated development can instead result in further incompatibility. To exemplify, inability to maintain or reintegrate with OEM business model, in the event of innovative process implementation, would have severe consequence on the relationship and ability to efficiently collaborate on future business possibilities. Instead, attention should be directed to the customer as well as end-customer to potentially acknowledge unaddressed challenges and opportunities (Chesbrough 2007), keeping a holistic value chain perspective on innovation.

The process developed in this thesis outlined four phases with detailed sub-steps, to provide a structure for how SCS can approach business model innovation through a proactive method of systematic iteration. It is essential that SCS secure financial resources to invest proactivity, and to be able to try various business models. In addition, when evaluating the success of a given model consideration should be given to both short- and long-term viability and profitability potential, while the innovation process should be adapted to respective customer for optimal business model integration.

As the process circulate around collaborative business development, it requires top management support for a culture and organizational mindset that is open to collaborations. Further, to comprehend the necessity of such mindset in order to improve probability of success with the possibility to achieve superior value creation through the value chain, thus increase market share and strengthen competitive positioning towards competing actors.

Similar, in establishing a formal process with appointed ownership for accountability and continued development, additional support and incentive to question customary approaches should be provided from the internal organization, as was of the essence throughout this thesis. In addition, using a cross-functional set-up, broken out from the otherwise strong hierarchal structure, can avoid development to be inhibited by traditional mindset and complex decision making flow. Further, creativity could benefit from a diverse mixture of participants, both well experienced and new employed with diverse backgrounds. Here, SCS must consider the effect of commonly found extensive employment period within either the same position, or as in the case where many have spent their whole work life within the organization. As such, the challenge is twofold. First, the risk of losing competency as employees retire. Second, the risk of being locked into one logic, which has previously proved successful, hence possibly less prone to approach innovative solutions. As such, the company should assess competence requirements and train employees to have capabilities needed to innovate the business model. Also, it is possible that a

project based structure with decomposition after a certain period of time can favor the quality of outcome tough including new perspectives. However, for such a process it is important that lessons learnt are still absorbed within the organization.

As business model innovation concerns the total system of value creation, proposition and capture, a project team or discussions should be appointed accordingly so that competency within each business model dimension is covered. The composition should include representatives from a range of corporate functions within SCS, for example from customer service, supply chain, account manager, application expert, and similar. Still, it is essential that each member is open to challenge and adjust accustomed approaches.

As SCS continuously execute and learn from the complete process, able to identify and exploit sources of innovation to the existing business model, the company will continue to build and strengthen capabilities in regards to business model innovation, in turn argued to become a competitive advantage of sorts. Additional benefits include strengthen customer relationships, where customer business model integration creates lock-ins, thus strengthen SCS position compared to competing actors, while there is also the signaling value found in engaging in discussions purposed to enhance created and propositioned value. Moreover, through greater transparency and a collaborate approach to business development.

As for customer relationships, emphasis on innovativeness in process development, for example through highlighting the proactive approach to business model innovation, can be a source for increased retention. Further, initiating business area spanning collaborations will allow for broader network and supplier recognition, which can increase cross-sales opportunities as well as being selected, or at least invited to competitive biddings. Also, SCS should continue to exploit customer needs, by acting on problem and opportunities to develop novel offerings that aim to solve needs other than what can be accessed through competing actors, thus creating a differentiator.

To ensure that the process is protected and continuously engaged in, SCS is urged to set a formal structure. Furthermore, performance measures, such as purely driven by sales or cost, risk that little time and resources will be invested in development purposes, which requires accordingly incentives to work with it. As of current, account managers have the primary responsibility for business development towards customers. However, it's difficult to get them to pursue the development activities as they work towards budgets and sales targets, which provides a diverging incentive. Instead, one recommendations could be for SCS to appoint process ownership in a function, project or parallel in the day to day work, depending on investment commitment, where we are of the opinion that little is better than none and that this could help to protect the process.

In terms of time spent on the phases in the process, the research by (Bucherer et al. 2012) show that the time spent on analysis, corresponding to the first and second phase in this thesis, vary depending on if it is driven by an opportunity or pressure. In the first it can take up to several years to reveal and find a suitable innovation, where the latter it is much faster. Hence, as SCS have expressed to be subject to external pressure, both resulting from changes at the customer and competing actors, and argue for the necessity to adjust to customer changes, indicate that external triggures will shorten the time to implementation.

8. Conclusion

This thesis was purposed to *understand how a company within a mature industry proactively can engage to innovate the business model*.

Business model change is required in order to respond to exogenous change and adjust by transitioning from a product-oriented business model to a farther service driven. As a supplier active in a mature industry, with current predominantly focus on product related innovations and operational efficiency, SCS must attend to business model innovation as the competitive climate intensifies.

When shifting focus on what drives the business model, from product to service, it is essential to create a structure for how to uncover and accordingly adjust how the existing business is organized, where it become essential to understand the dynamics that prevail between dimensions. As such, SCS need to understand to how to adjust the business model, considering both internal and external factors to attain viability. To be able to do that, a formal process can assist to structure the work on how to approach to innovate the business model, thus move from a reactive to proactive pursuit of business model development. This address the research question of *"How should Parker Hannifin SCS as an incumbent within a mature industry proactively organize to innovate their business model?".*

This thesis suggests that SCS can organize for proactive and attentive activities to innovate the business model by using a structured innovation process. The process that has been developed, executed and reflected upon during this study was designed based on the specific case context and consist of four phases; Assessment, Analysis, Alignment and Adaptability.

To proactively engage to innovate the business model, SCS need to build or acquire the necessary resources and capabilities to successfully execute all process steps. Notable requirements for doing so are competencies and resources for uncovering and absorbing relevant information from the external environment to reveal sources of innovation. The ideation process favor from the involvement of diverse perspectives from a mixture of functions, both for creativity purposes but also to comprehend alignments or misalignments found in the existing business model or external environment, with regards to the strategies and business models of customers, as well as larger trends.

Continually, a trial and error approach is necessary to find a valid business model, where systematic iteration is recommended to continue also after the identification and implementation of a successful business model, as a business model is deemed unsustainable as the ever changing external environment determines both efficiency and viability. Thus, continued process iteration will favor business model alignment to the customers and increase value creation. Continually, the application of analogical reasoning, enable SCS to break out from longstanding logic and industry recipes, by extending the attention beyond firm and industry boundaries. Furthermore, to uncover innovative ideas on how to approach opportunities or threats, the firm is urged to utilize external sources and imitation as innovation source to SCS existing business model.

Foundational knowledge requirements include an assessment of the current business model, in all its dimensions, as it is key to understand the recourses and capabilities required to execute this process as well as from where the innovation depart. Also, considering the continuous change in external environment, SCS need grasp developments, how it translates to the firm and to

continuously update the information derived during the assessment phase to be able to work proactively with innovations.

The thesis concludes that the systematic iteration within and between process phases is part of the success, supplemented by an openness and understanding of the case context for the involved actors as well as the importance of sharing a view of how to cooperate for innovation. Thus, recommendations for SCS is to test and iterate the process and further extend the number of included parties to increase the possibility of identifying even more innovation sources, as well as to discover eventual current inefficiencies.

Further, establish protection, we are of the opinion that SCS need to formalize the process with appointed responsibility and accountability for process execution, and ensure that the right support is provided from the organization. Furthermore, to make accordingly adjustments to performance measures and incentivize employee engagement.

For further research, it would be interesting to explore the process applicability to other contexts. Although this thesis has focused on the process design and applicability for proactive business model innovation, to break out of organizational inertia, for an incumbent supplier to OEMs to break from inertia, we believe that the process can be successfully replicable to other companies of similar characteristics. However, it would also be of interest to explore and contrast the process success when executed by a mixture of firms, not solely those similar to the focal firm.

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10. Appendices

1. Interview Questionnaire to SCS
2. Interview Questionnaire to OEMs

Appendix 1: In-depth Interview Questionnaire to SCS

Organisation

- Please explain the organizational structure for SCS.

Challenges

- Can you please tell us about the challenges SCS face?

Opportunities

- What is your take on service development?

Business Model

- Please describe how you perceive SCS operations.
- Please describe your value proposition.
    - What do SCS offer the customers?
    - Can you please tell us about your market segment?
- Please describe how do SCS create value.
    - Tell us about your key resources and key activities that favor business model.
- Please describe how do SCS capture value.
    - Can you please describe SCS revenue model?
- Describe your take on the interplay between the components in the business model; customer value proposition, value creation and value capture.

Appendix 2: Interview Questionnaire to Customers

The following questions are not limited to Parker Hannifin sold parts.

Organisation

- Please explain your organizational structure

Challenges

Note that below question refer to your total aftermarket and is not limited to Parker Hannifin supplied parts.

- Can you please tell us about the challenges within the aftermarket.

Opportunities

Note that below questions refers to your total aftermarket and are not limited to Parker Hannifin supplied parts.

- What opportunities do you see for the aftermarket?
- What is your take on aftermarket development?

Current situation on the aftermarket

Note that below question refer to the total aftermarket and is not limited to Parker Hannifin supplied parts.

- Please describe your current situation within the aftermarket?

Business Model

Note that below questions refers to your total aftermarket and are not limited to Parker Hannifin supplied parts.

- Please describe your value proposition for the aftermarket?
    - What do you offer your customer?
    - Can you please tell us about your market segment?
- Please describe how you create value.
    - Tell us about your key resources and key activities that favor business model?
- Please describe how you capture value.
    - Can you please describe your revenue model?
- Describe your take on the interplay between the components in the business model; customer value proposition, value creation and value capture

Parker as a supplier

- Which do you consider to be Parkers strengths and weaknesses?
- What works well/poor today with Parker?
- How can a supplier contribute to the aftermarket development?

Macro-economic forces

- What are the macro-economic forces that impact your industry?