HALT AND CATCH FIRE

A study on business model innovation and the effect of the upper echelons mental models

Master thesis 2018

The dissertation is submitted as part of the “Executive MBA-study” at the University of Stavanger Business School

FACULTY OF SOCIAL SCIENCES

UIS BUSINESS SCHOOL

MASTER'S THESIS

STUDY PROGRAM:	THE THESIS IS WRITTEN IN THE FOLLOWING SPECIALIZATION/ SUBJECT:
Executive Master in Business Administration	Business strategy and organizational behavior IS THE THESIS CONFIDENTIAL? No
TITLE: Halt and catch fire – A study on business model innovation and the effect of the upper echelons mental models	

AUTHOR		ADVISOR
Student number: 237289	Name: Cathrine Brudeseth Johansen	Kenneth H. Wathne Øystein D. Fjeldstad

Acknowledgement

I would like to take a moment to show my profound appreciation to those who have made this accomplishment possible.

To my advisors, Professor Kenneth H. Wathne from the University of Stavanger and Professor Øystein D. Fjeldstad from BI Norwegian Business School. I would like to express my sincere gratitude for your immense knowledge, insightful discussions and guidance.

To Erik Magnus, I appreciate your unfailing support and constant encouragement throughout this process.

Thank you!

Abstract

In the face of external shifts, the upper echelons set the strategic orientation for the company and innovate their business models accordingly. However, the industry has little understanding of the influence that dynamic conditions and the dominant logic of the firm has on business model innovation. The study applies a perspective of organizational behavioral theory to examine how business model innovation is affected by the top managers mental models. The methodology uses a longitudinal study by applying a qualitative content analysis. The sample consists of the five largest aquaculture firms in Norway listed on the OSE. The context is an uncertain market with substantial exposure to threat. Results show how the strategic orientation of firms govern the top managers risk attitude, which in turn lead to different organizational outcomes. This shows a predictably irrational behavior by the top manager's that is anchored in their strategic orientation. Findings also demonstrate how company's value configuration may influence innovation to firm's business models. This is shown to act as a blinder to business model innovation and were found to be especially evident among defensive organizations. As such, the result positively confirms that top manager's mental models are essential in the decision-making process related firm's innovation of their business model.

Based on an organization's change perspective, the study intends to prove how top managers need to proactively challenge their mental models, both from an operative and dynamic standpoint. This, to maintain or regain competitive success in the complex market outlook. Those organizations that can learn to recognize the importance of building a diversified top management team will enable the firm to exploit and recognize both internal and external shifts, to a much greater extent. This will support firms in overcoming organizational inertia and make them appropriately fit to conduct more rational strategic choices.

Keywords: Business strategy, organizational behavior, business model, business model innovation, value configuration, industry 4.0, strategic management, strategic decision-making, upper echelon theory, mental models, managerial cognition, prospect theory, organizational inertia, threat-rigidity theory

Table of contents

List of figures

List of tables

1 Introduction

The first chapter will introduce the thesis rational and worthy of study at this moment in time.

By having surveyed the landscape it has been found how an increasing number of firms fail to innovate their business model, and that those who manage to succeed, are merely considered an exception to the norm (Anand & Barsoux, 2017; Christensen, Bartman, & Van Bever, 2016; Hess, Matt, Benlian, & Wiesböck, 2016; Saebi, 2016; Saebi & Singh, 2016). This breaks with the human illusion of having the ability to control and foresee the future and thus logically, requires an explanation or narrative of firms successes and failures that is recognized by cause (Kahneman, 2011).

The benefits of business model innovation are becoming more apparent (cf. Markides & D., 2004; Saebi, 2016; Zott, Amit, & Massa, 2011). As a result, this push forward growth in academia and industries alike. However, the weakened condition of business model innovation (cf. Fjeldstad & Snow, 2017; Foss & Saebi, 2018; Saebi, Lien, & Foss, 2017; Zott et al., 2011) and absence of an acceptable theory has questioned the state of the emergent literature (Fjeldstad & Snow, 2017; MacKenzie, 2003; Saebi et al., 2017). Accordingly, firms are lead into confusion and misguided advice (Christensen et al., 2016; MacKenzie, 2003). Several scholars have tried to identify barriers to business model innovation (Amit & Zott, 2001; Chesbrough, 2010; Christensen, 1997) and what causes firms to fail (Christensen et al., 2016; von den Eichen, Freiling, & Matzler, 2015). In the lack of a clear explanation, one thing that is certain is how firms decision-makers have a significant impact on the actions and outcomes of innovation to their business models (Taran, Boer, & Lindgren, 2015). Theory support how organizational performance and outcomes are reflected in the cognitive and demographic characteristics of the company's strategic decision-makers (Hambrick & Mason, 1984). Top managers are bounded by their own rationality and apply their mental model, heuristics and biases to handle these complex and uncertain situations (Cyert & March, 1963; Johnson-Laird, 1983; Simon, 1955; Tversky & Kahneman, 1974). As such, they evidently affect the firm's adaptability and change through their cognitive filtering system that include experience, antecedence, dominant logic and path dependency (Carpenter, Geletkanycz, & Sanders, 2004; Johnson-Laird, 1983; Prahalad & Bettis, 1986; Thomas, Clark, & Gioia, 1993; H.-F. Tsai & Luan, 2016). This does in turn influence the firm's strategic orientation (Gatignon & Xuereb, 1997; Miles, Snow, Meyer, & Coleman, 1978) and impacts the functional aspect of the business model for specific organizational measures (cf. Tikkanen, Lamberg, Parvinen, & Kallunki, 2005). In other words,

top managers and their mental models act as a screening mechanism to organizations internal context and external environment (cf. Cyert & March, 1963; Jones, Ross, Lynam, Perez, & Leitch, 2011).

Despite what seems like a critical line of research, scholars have shown little focus and attention to the role of managerial cognition in situations where organizations are exposed with uncertain market conditions (Kaplan, Murray, & Henderson, 2003). It is however believed to be important, and a significant factor for understanding what causes firms to innovate their business models (cf. Saebi et al., 2017). Having elaborated on how managerial behavior plays an important role in organizational outcomes, mental model theory is considered significant in that it reflects an actors tool for mental reasoning (Johnson-Laird, 1983), as it act as a cognitive representation of the external reality (Jones et al., 2011, p. 46).

1.1 Thesis rationale

Industry 4.0 demonstrate external shifts that continue to demand industries and markets to change. Recent, industry reports show how organizations and their top management have increased their notion related to digital technologies (PwC, 2017a). These findings are significant in how logically, theory would suggest that the top managers have reduced their biases (Tversky & Kahneman, 1974) and gained a greater understanding of the external conditions. This because of the managers increased self-awareness to their deficits and renewed their mental model (Barr, Stimpert, & Huff, 1992; de Gooyert, Rouwette, Kranenburg, Freeman, & van Breen, 2014). In turn, this should have given firms an improved potential to succeed at business model transformation (cf. Aspara, Lamberg, Laukia, & Tikkanen, 2013; Chesbrough, 2010). However, according to organizational theory this has been seen to not be the case (cf. Christensen et al., 2016; Tripsas & Gavetti, 2000).

Looking at Norway as a digital nation, research have identified how the country is dependent on transition to manage the digital shift (cf. Saebi, 2016). Accordingly, there is a distinction between adaptation of new technology and the level of innovation among firms business models (Saebi & Singh, 2016). Despite their supposedly low level of business model innovation, recent reports has shown how 85 per cent of senior executives believe that technology will revolutionize the aquaculture industry (PwC, 2017c). 75 per cent are also confident that their company will invest and adapt in new technologies in upcoming years (PwC, 2017c). What this might indicate, is a discrepency between the attention and willingness of firms strategic decision-makers (T. S. Cho

& Hambrick, 2006; Hambrick & Mason, 1984; Ocasio, 1997), and is thus contradictory to current academic literature on business model innovation.

At present, the aquaculture industry is exposed to significant challenges related to production growth including climate change (e.g. increased sea-temperature) and higher governmental attention to sustainability (e.g. increased taxation, access to new acreage). For nearly four years, 2012 to 2016 related to produced volume the industry has remained at status quo, whilst production costs have increased with almost 50 per cent (PwC, 2017c). More so, within year 2050 the goal of the Norwegian governments to is become the leading seafood nation whereas the aquaculture industry holds a significant position. However, for the industry to successfully execute such growth, it will require change.

1.1.1 Thesis structure

To coincide with the underlying rational of the thesis, the structure has been specifically addressed and divided into five main chapters (figure 1). The first chapter provides an introduction and clear rational to the worthy of study. To build sound empirical research, the second chapter creates a theoretical anchor of relevant theory, appropriate methods and models. This is separated into four main theoretical perspectives. The foundation also allows for identifying any potential gaps and help verify the research question. The chapter also gives a summary of the main theoretical perspectives and how these are interlinked before evaluating the theoretical contribution. The third chapter will explain and justify the chosen research design, methodology and data source that will be used for the empirical research. Thereafter, the fourth chapter presents the empirical data. The fifth chapter discuss and critically reflects upon the empirical data, before the main findings are highlighted to present the conclusion in chapter six. The sixth and final chapter, builds a conclusion on the study findings based on the evaluation of the research question and its compliance with proceeding research. Lastly, study limitation and opportunities for future research is presented.

1. Introduction
1.1 Thesis rationale
1.2 Purpose of the study
2. Theory and theoretical background
2.1 Main theoretical perspectives
2.2 Summary of the main theoretical perspectives
2.3 Evaluating the theory contribution
3. Design and methods
3.1 Research design
3.2 Research methods
4. Empirical data
4.1 Primary source
4.2 Supplementary source
5. Results
5.1 Discussion and critical reflection
5.2 Summary of main findings
5.2 Main challenges and limitations
6. Conclusion
6.1 Evaluation of research question
6.2 Compliance with previous research
6.3 Limitations and opportunities
6.4 Future research

Figure 1 – Thesis outline, a high-level structure

1.2 Purpose of the study

The purpose of the study is to examine innovation to organizations business models through the perspective of upper echelon theory (Hambrick & Mason, 1984) and top manager's mental models (Hill & Levenhagen, 1995; Johnson-Laird, 1983; Jones et al., 2011). This, to understand the role top managers play in influencing business model innovation. More specifically, the study employs business model innovation as a dependent variable and mental models as an independent variable, to examine how top manager's mental models influence innovation to firm's business models. This is studied in the context of uncertain market conditions (Barr et al., 1992; Tversky & Kahneman, 1974).

It is acknowledged that the research alone will not be sufficient in achieving any great scientific advances. However, the study aims to contribute to enhanced knowledge within the field and to implement a solid foundation, of which later research can be built. As such, the author aims to contribute to the emerging literature on business model innovation and practical recommendations to organizations on the potential influence top manager's mental models may have on business model innovation. In light of this, the research question and its objectives will be further presented below.

How is business model innovation affected by the upper echelons mental models?

The following objectives has been specifically addressed to answer the research question:

- To explore the concept of business model innovation and mental models
- To examine the effect that top manager's mental models have on business model innovation

2 Theory and theoretical background

2.1 Main theoretical perspectives

Theory has a distinct purpose and reflects the material part of the research process (Remenyi, Williams, Money, & Swartz, 2002, p. 64). The study has chosen a theoretical perspective of business model innovation that is based on business strategy and organizational behavioral theory. The perspective argues how the mental models of the firm's upper echelons, are influenced by both internal context and external conditions. This, to understand business model innovation and how it is affected by the strategic decision-makers (i.e. top managers) mental models.

The second chapter address the main theoretical perspectives that provide a solid theoretical background of which the rest of the master thesis is built. This, with the overall intent of accurately highlighting the phenomenon and research question. On this basis, four main theoretical perspectives were identified. First, industry 4.0 present the environmental conditions and study context. Second, literature on business model and business model innovation theory is reviewed, and the current state of the theoretical foundation and conceptual context is identified. Types and key barriers to business model innovation is further presented, prior to examining corporate strategy and its relation to business model innovation. The fourth sub-section present organizational behavior and mental model theory. This, to understand the contributing factor and relation between managerial cognition and innovation to firm's business model. The fifth and final sub-section, aim to summarize and create a linkage between the importance of strategic decision-makers mental models and its cognitive barriers to business model innovation. To summarize, sub-section 2.2 provide the reader with a link between the main theoretical perspectives. Lastly, sub-chapter 2.3 evaluate the theory contribution and present the appropriate research design, methodology and data source to be used for the thesis.

2.1.1 Industry 4.0

Definition and context

Industry 4.0 (more commonly known as digital transformation) has been a controversial, and to many a difficult term to comprehend. To tackle digital transformation it is argued to require more from firms than merely changing processes related to tangible equipment, resources and implementation of digital technologies (Teece, 2017). Transformation requires adaptation to

constant change, and continuous replacements that are shaped by technologies (Kane, 2017). As such, the concept of digital transformation could be described through an integration of digital technologies into various aspects of an organization. And as a result, this would make significant changes in everything from customer deliverables to operational procedures (Bounfour, 2015; Neus, Buder, & Galdino, 2017).

Industry 4.0 has been referred to as the 'sub-human intelligence' phase, which means that humans are still considered to be smarter than technology (Belleghem, 2015; PwC, 2017b). As opposed to industry 3.0, that gave rise to replacing human labor-force with machines and robotics (Brynjolfsson & McAfee, 2015) the following industrial revolution has taken a step further through automatization and technological systems, and made it co-exist in a completely different way. The industry shows to minimized human operations by using digital technologies as support tools e.g. big data analysis, robotics, computerized learning, artificial intelligence and making these parts of the firm's genetic code to create value (cf. Andersen & Sannes, 2017; Drath & Horch, 2014; PwC, 2017a, 2017d). Generating, analyzing and communicating data seamlessly underpins the gains that were promised by industry 4.0. This discloses all firms physical assets which integrates into digital ecosystems together with all partners in their value configurations (Drath & Horch, 2014; PwC, 2017d). The characteristic elements of the industry and the advancement of technology has been classified into three distinct features by Brynjolfsson and McAfee (2015), and include digital, combinational and exponential elements. Digital discloses an adjustment from digital technology as a support tool for the company (e.g. Brynjolfsson & McAfee, 2015; Dörner & Edelman, 2015; Snow, Fjeldstad, & Langer, 2017). The combinational characteristic of digital technology as a second element, shows how innovation, as a process, is identified as building block (cf. Brynjolfsson & McAfee, 2015; Snow et al., 2017). The third and final element, concern how both utility and power continually improve. However, time will not allow firms to learn what will happen next and the organizational behavior is therefore considered predictable (Brynjolfsson & McAfee, 2015; Snow et al., 2017). The three characteristics in combination with human's mental models will cause the development rate of digital technologies to increase rapidly (Snow et al., 2017).

Overall, the generalized perception of the industry is that it creates a wealth of opportunities for the companies, independent of industry, which embraces the transformation. And moving forward, it will continue to pose an even greater impact on society, governments and businesses alike. A common ground to all preceding revolutions has been change such as processes, structures, management and decision-making processes, and how all of these have transformed

firms one way or another. Industry 4.0 has made automations and computer systems meet in an entirely new way (Drath & Horch, 2014). This, with a frequency and exponential growth within technology that companies have not seen before (cf. Denning & Lewis, 2017; Moore, 1965). It restructures and reshapes the firm's context, in which represent organizational change. This is clearly more than merely transforming through technology implementation and process re-design (Liu, Chen, & Chou, 2011), and demonstrate the effect transformation has on firms business models, the importance of closer monitoring and strategic adaptations to enable appropriate changes (Hess et al., 2016; Saebi, 2016).

Norway as a digital nation

In Norway the level of infrastructure and digital maturity among the population is considered to be generally high, with a considerable level of innovative capacity and adaptation to new technical solutions (Austlid, 2017; Bolstad & Lie, 2014). This is supported by demographic studies that identified as many as 96 per cent of the Norwegian population to be connected to the internet (SSB, 2017) and, ranked Norway the highest among EU countries on basic computer skills (Cooke, 2016). Opposed to this, on a global basis Norwegian companies have been identified at the lower half of OECD countries, with respect to spend of gross domestic product on R&D intensity of total business technology (OECD, 2017). In contrast to Norway's low score, Finland, Sweden and Denmark are ranked among those with highest spending, relative to the intensity of total business technology (Cooke, 2016; OECD, 2017). Similarly, a report supported by the Nordic Council of Ministers 2015/2016 refers to Norway as the slowest when it comes to expansion of digital technologies in the Nordics (Group, 2015).

Research on senior executives and board members of Nordic companies underpin the argument of how dramatic the consequence of digitization and consequent transformation will impact their organization in the future (Alm et al., 2016). Findings show how only 50 per cent of employees have confidence in their executive's technical capabilities and an even smaller percentage believed their firms had a clear digital strategy. Moreover, only half claimed that their board was driven towards a digital agenda (Alm et al., 2016). Correspondingly, Andersson and Van der Heyden (2016) large European survey found that board members and executives identified a shortage related to both knowledge and focus of leading digital transformation. In light of this, findings indicate how the majority of Norwegian companies and their top executives are fairly hesitant to transform (cf. Alm et al., 2016; Saebi, 2016; Saebi & Singh, 2016). Despite this, there can also be found examples of firms that has eluded from this trend by embracing the

transformation and internet of things. Such an example is the Norwegian media conglomerate Schibsted ASA. The senior executive's decision to fully make use of the internet more than twenty years ago, confronted the classical norms within the organization and further altered the various aspects of the company, e.g. business model, processes, products and culture (Andersson & van der Heyden, 2017). Despite the high risk associated with such a major transformation, their decision built the foundation for what is today a global multimedia conglomerate that has grown to a total market capitalization of more than 56 billion NOK (Andersson & van der Heyden, 2017).

Business model innovation in Norway

The transition into the digital era causes the market conditions for many industries to change, and Norwegian firms remain no exception to this transformation. Shifts to the sharing economy, servitization, open innovation and also awareness to sustainability, all cause the classical business models within Norwegian companies to change (Chesbrough, 2003, 2012; Saebi, 2016). Yet, studies have shown how a minority of Norwegian companies succeed in altering their business models (cf. Christensen et al., 2016; Saebi, 2016; Saebi et al., 2017). This was clearly stated in a survey conducted by the Norwegian Center for Service Innovation of autumn 2014, which indicated how only a small percentage of Norwegian companies had truly changed their business models over time (Saebi & Singh, 2016). The study further elaborated on two probable causes for the low levels of innovation, including (*i*) the lack of awareness by the executives connected to the firm's business model, and (*ii*) that they hesitate to change their status quo (Saebi, 2016). Although such probable causes of ignorance or reluctance to change might cause business model failure, other barriers should not be excluded such as executives being too eager to renew their business model but lack the appropriate knowledge about how to control the transformation and implement the process (Saebi, 2016; von den Eichen et al., 2015).

The pragmatic view of innovation that is led primarily by MNEs, with support from Norwegian innovation cluster programs, may also impede changes in business models among Norwegian firms. And, in order to fully renew the company's business model firms need to alter their business model in accordance with such cluster programs (Saebi, 2016). A recent study on the adoption and innovation of business models in Norway found how most companies reported variable changes to their current business model (Saebi & Singh, 2016). Additional findings identified how innovations related to value-adding component of the firm illustrated the highest percentage of unchanged models (Saebi, 2016; Saebi & Singh, 2016) and that one fifth innovated their business models in accordance with their products and services (Saebi, 2016).

The current state of Norway as a digital nation and its low rate of R&D intensity and product related innovation (Cooke, 2016; OECD, 2017) has shown to be consistent with studies conducted on business model innovation. This highlight Norway's low degree of business model innovation (Saebi & Singh, 2016). This might therefore explain why firms allocate marginal amount of their budget to business model innovation, whilst the majority of the budget is spent on process and product related modifications (Gassmann, Frankenberger, & Csik, 2014; Saebi, 2016).

Aquaculture in transition

The seafood industry is the second largest export industry in Norway. Within seafood, farmed Atlantic salmon is by far the largest contributor to exported products, and accounts for more than 68 per cent of the total value (Norwegian Seafood Council, 2018a). In 2017, the total volume of exported seafood grew with 7 per cent to 2,6 million tones and even though it is led by the high spot- and forward prices on salmon, the total export value also grew with 3 per cent to 94,5 billion NOK (Fish Pool, 2018; SSB, 2018). As such, the greatest contributor to the fishing-industry in respect to the total value, is the aquaculture industry.

The aquaculture industry accounts for 72 per cent of the total value (including salmon and trout), whilst consist of 40 per cent of the total exported volume (Norwegian Seafood Council, 2018b). Within 2050, the Norwegian government has stated that their vision is for Norway to become the world's leading seafood nation (PwC, 2017c). As such, they aim to merely double the total exported volume. This clearly illustrates the countries dedication to grow and develop the industry in the upcoming years. The salmon and trout farming industry in Norway consist of approximately 100 companies, whereas five are listed on the Oslo Stock Exchange. Several of the large aquaculture players are fully integrated and thus control the complete value chain from feed to production and sale.

The cost related to production of Atlantic salmon has dramatically increased over the last century. This is shown in how cost per kilogram has gradually increased since 2005. In contrast, since 2012 the production volume has stagnated (PwC, 2017c). PwC (2017c) conducted an analysis on the historical cost versus the produced volume as part of a larger study on the aquaculture industry. The studies illustrate how the actual production cost per kg has remained relatively stable from year 1994 to 2012, whilst increasing intensely from year 2012 to 2016 (figure 2). The graph further indicate how the production volume has gradually increased from year 1994 to 2012, and stagnate from the year 2012. The major increase in operational cost is

primarily associated with cost related to feed but also to treatment of sealice. Within the same period, the cost accociated with personnel have increased with 22 per cent (PwC, 2017c). What this drastic increase in cost combined with stragnation in production volume illustrate, is the need for improvement, adjustment and renewal of these organizations business models.

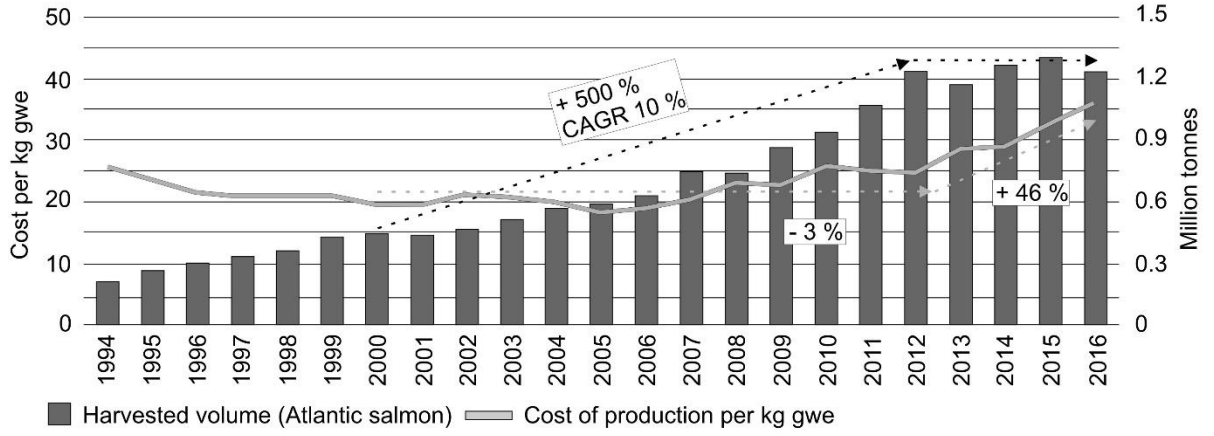

Figure 2 - Historical data on harvested Atlantic salmon versus cost of production (Modified from PwC, 2017c)

Future outlook on the Norwegian acquaculture industry

Studies show how 75 per cent of executives and managers in the aquaculture industry have confidence in that adopting new technologies will have a potential impact of changing the industry within the next five years (PwC, 2017c). In addition, as much as 85 per cent of these managers considered it to be highly probable that their firm would invest in new technologies for them to increase their operational efficiency within the next five yeas (PwC, 2017c). The level of new techologies are growing exponentially (e.g. Denning & Lewis, 2017; Diamandis & Kotler, 2015), and become more commercially viable as both time to market and cost rapidly falls (PwC, 2017c). The use of technologies such as big data and artificial intelligence are all technological solutions that has the potential of effectivly increasing job effieciency. Technologies such as analysis of big data, machine learning and artificial intelligence, has the potential to highly optimize production, reduce cost and act as supporting grounds for decision-making within firms (Dremel, Wulf, Herterich, Waizmann, & Brenner, 2017; Kelly et al., 2017). Correspondingly, the potential benefits of increasing the automatisation in combination with artificial intelligence and computer learning may result in reduction of on-site personel. These technologies are hitherto unexploited in the industry and among the technologies that may help companies adjust to the dymanic conditions. Overall, the turbulent and shifting marketplace has led to costs associated with new technology and the time from innovation to market, has reduced drastically over the last few of years (PwC, 2017c). On this basis, it provides companies with the

benefit of adapting new technologies cheaper and quicker – as these are more viable and extensively used in several industries (cf. Kelly et al., 2017).

2.1.2 Business model and business model innovation

Theoretical foundation, conceptual context and business model research

Recent literature has shown how definitions, theory and operational usage of business models vary as well as alter the distinctions within the field (Fjeldstad & Snow, 2017; Saebi & Foss, 2015; Saebi et al., 2017). More so, it has been claimed that academics have been inclined to implement a definition that works in the author's personal favor. This, to merely strengthen their own research contribution (Zott et al., 2011). In light of this, research has identified silos of the terms various classifications that seems to be in complete isolation, which further creates more difficulties of bringing these together (Foss & Saebi, 2017). Correspondingly, this continues to create a vicious circle for the literature itself (Lambert & Davidson, 2013; Zott et al., 2011).

The body of business model literature has undergone several periods to which has naturally changed the angle of the definition. Although the business model terminology was used throughout the 1950s, it was not adopted to management and academic research before late in the 1990s (Zott et al., 2011). This was the age of the internet, dot.com, start-ups and virtual firms, and where 'growth economy' became a considerable provider to the extension (Amit & Zott, 2001). Through the 2000 period, the terminology was concerned with businesses finding new opportunities to increase income. In particular, interpretation of strategic literature was challenged by the concept of e-commerce that shed new light on business models (Teece, 2010). As such, virtual firms opened for new ways to capture and deliver value to organizations and customers through various distribution channels. This seem to clarify why more modern research on business models are related to e-commerce (Amit & Zott, 2001; Morris, Schindehutte, & Allen, 2005).

Taking a step back whilst reflecting on the theory contribution, authors have claimed how the perspective of Peter Drucker could have helped steer literature in a more sensible direction than its current state (Fjeldstad & Snow, 2017; Magretta, 2002). Drucker (1954) argued how the purpose of a firm is interlinked with the creation of a customer. This, through a customer's willingness to pay for a product or service, in which the willingness is based on their perceived value (Drucker, 1954). This confirms how value again, is the source to the firm's value proposition. As opposed to this, the negative development of business model literature is

considered a conceptual proliferation similar to other fields (Saebi et al., 2017). Other definitions that are of significant character is the definition established by Pete Forrester. Decades ago, Forrester (1958) connected the organizational process to a dynamic dimension of the different elements within a business model. This viewpoint may be linked to modern thinking, which corresponds with the dynamic perception on business models by current field experts (e.g. Fjeldstad & Snow, 2017; Teece, 2017). Yet, what seems to change to a gradually dynamic outlook is therefore contrary to what has been explained, theorized and characterized as static in academic literature (Saebi et al., 2017; Tikkanen et al., 2005). Despite this, Forrester is often omitted from the literature due to his reference to a "company model" rather than a "business model". As such, it might be argued that Forrester (1958) has not been given the same focus nor acknowledgement within the business model literature that perhaps deserved (Fjeldstad & Snow, 2017).

Amongst the wealth of definitions on business model, several emphasize the disintegrated nature of existing conceptualizations on the term (cf. Amit & Zott, 2001; Foss & Saebi, 2018; Venkatraman & Henderson, 1998; Winter & Szulanski, 2001). G. Johnson, Whittingston, Scholes, Angwin, and Regnér (2017, p. 234) state that "*business model describes the business logic of an enterprise including the domains of value creation, value configuration and value capture*". Alike, Casadesus-Masanell and Ricart (2010, p. 195) define a business model as "*the logic of the firm, the way it operates and how it creates value for its stakeholders*". What these authors insightfully highlight, is how organizations are faced with a variety of choices. This again explains the organizations distinction from one another and as such, indicates how each firm hold their own unique business model. What is more, they also further explain how business models is made up of two components identified as choice and consequence (Casadesus-Masanell & Ricart, 2010). Other definitions such as, Venkatraman and Henderson (1998, p. 46) explain how "*the business model is a coordinated plan to design strategy along all three vectors rather than leading in any one vector*" and further note how the firms strategies should clearly distinguish between these three interdependencies. With certain similarities, modern research define an firms business model as *"[…] typically a complex set of interdependent routines that is discovered, adjusted, and fine-tuned by "doing"* (Winter & Szulanski, 2001, p. 731). These definitions do not only reflect the dynamic nature but also the cognitive aspect of a business model. Change is reflected in the firm's cognitive element more specifically, the individuals within an organization. When faced with change that are caused by external challenges (e.g. disruptive innovations), the choice of strategic direction is taken by the strategic decision-

makers, and the firm's business model is modified or completely changed, accordingly (Chesbrough, 2010).

Despite certain disagreement, studies have begun to agree how a firm's business model is the core logic of how it creates, delivers and captures value (Fjeldstad & Snow, 2017). This could further be exemplified by, Amit and Zott (2001, p. 511) that describe how a business model is "*the structure, content, and governance of transaction' between the focal firm and its exchange partners (e.g. customers, vendors, complementors)*". The definition clearly outlines how delivering value, whether applied to earnings or the ability to create value to customers or the firm itself, is where the fundamentals of the business model lies (Chesbrough & Rosenbloom, 2002). Others have argued how a *"business model [is] a conceptual, rather than a financial model of a business"* (Teece, 2010, p. 173). The latter has been claimed to coincide with a majority of business model definitions. This because it hold a process i.e. system rather than event based approach (Chesbrough & Rosenbloom, 2002; Teece, 2017). Although it centers around the economic aspect of a firm, it seems to reflect clear connections to Drucker (1954) view by centering the focus of value creation on the customer.

In conclusion it is apparent that for the theory and field to progress, it must meet with the definitions of interrelated constructs and a clear set of propositions that are presented in a structured and systematic view which undoubtedly defines its purpose (Kerlinger & Lee, 1999). The current theory contribution illustrates how the academic literature still lack a single conceptualization. Therefore, the theoretical foundation is still without a universally accepted definition nor explaining what the term encompasses in its entirety (Chesbrough & Rosenbloom, 2002; Fjeldstad & Snow, 2017; Foss & Saebi, 2018; Saebi & Foss, 2015; Santos, Spector, & Heyden, 2009; Teece, 2017; Zott et al., 2011). Interestingly, due to the lack of a definite meaning of the business model term, it has also been questioned whether business models are developed through organizational design or if it is merely something each and every organization has completely independent of each other (Foss & Saebi, 2018).

Elements of a business model

As literature clearly shows, the use and description of the business model term varies greatly among scholar and practitioners. This has resulted in a somewhat ambiguous terminology (Schneider & Spieth, 2013; Zott et al., 2011). And as a result, logically, the elements that define the term will vary along the same lines.

Recent study found 73 business model components that varied semantically across the literature (Clauss, 2017). Another comprehensive research found forty-two different business model components during the period 1998-2005 (Shafer, Smith, & Linder, 2005). This explains the diversity and difficulty of concluding to a simple direction. Correspondingly, it has been shown how scholars are two-fold on how they choose to outline the different components that defines the term. On the one hand, elements are shaped based on central questions that researchers would like answered (cf. Amit & Zott, 2012; Magretta, 2002). While on the other hand, it is chosen to openly frame the elements that are used to define business models (cf. Casadesus-Masanell & Ricart, 2010; Chesbrough & Rosenbloom, 2002). The former could be exemplified by the definition by authors such as Timmers (1998) which based the research questions on marketing strategy to measure the commercial feasibility, by asking questions including positioning, marketing mix, go-to-market strategy and competitive advantages. Along the same lines, Magretta (2002) explores questions of what brings value to the customer and who the customer is. This further leads to key questions on how the business can generate profit and the underlying economic logic that describe the mechanisms for delivering value to customers at an affordable cost (Magretta, 2002). As opposed to asking questions, several researchers have simplified the number of components for instance key processes, key resources, value proposition related to the customer and revenue method (e.g. Christensen et al., 2016; M. W. Johnson, Christensen, & Kagermann, 2008) or market segment i.e. target segment, value capture, value promise i.e. value proposition and value deliverables (Saebi, 2016) or value network, value capture, value creation and strategic choice (Shafer et al., 2005). Fjeldstad and Snow (2017, p. 3) presented four elements explicitly value propositions, value creation mechanisms, value appropriate mechanism and role of customers. Chesbrough and Rosenbloom (2002, pp. 533-534) adds another component and end up with six elements illustrating the purpose of a business model including market segment, value proposition, value chain, cost structure and profit potential, value network and competitive strategy. Lastly, Osterwalder and Pigneur (2010) acclaimed business model canvas has been used to separate the business model into nine components. These nine components include; value propositions, key activities, key resources, key partnerships, channels, customer relationship, and customers segments cost structure and revenue streams. However in contrast to considering categories and elements as crucial in creation of a business model, some scholars define business models independently, and that categories and variables are no prerequisite for a business model (cf. Casadesus-Masanell & Ricart, 2010) (table 1).

On the basis of the ambiguity found in the current theory contribution, an overview of business model definitions and its respective components has been collected from a period of approx. 20 years, including modifications from previous work by Nenonen and Storbacka (2010), Saebi and Foss (2015) and Zott et al. (2011) (table 1). Evidently, the review of existing literature shows that despite the variety in elements used, there is still some similarities to which components are constantly recurring in the literature (cf. Giesen, Riddleberger, Christner, & Bell, 2009; Saebi et al., 2017). In addition, several of these coincide with certain aspects that are related to such elements e.g. value proposition, value capture of an organization, architecture, value configuration and market segment (cf. Fjeldstad & Snow, 2017; Linder & Cantrell, 2000; Magretta, 2002; Morris et al., 2005; Saebi & Foss, 2015; Teece, 2010).

Definitions and concept elements of business model

Researcher(s)	*Definitions*	*Concept elements*	*Year*
Timmers	*"An architecture for the product, service and information flows, including a description of the various business actors and their roles, a description of the potential benefits for the various business actors; and a description of the sources of revenues" (p. 4)*	- Marketing strategy - Value chain de- and re-construction - Interaction patterns	(1998)
Linder & Cantrell	*"A business model, strictly speaking, is the organization´s core logic for creating value. A change model is the core logic how a firm will change over time in order to remain profitable. The capacity to distinguish and communicate these models will improve your organization´s focus, establish a framework for competing agility, and position your company to thrive despite industry discontinuities" (p. 1)*	- Pricing model - Revenue model - Channel model - Commerce process model - Internet-enabled commerce relationship - Organizational form - Value proposition	(2000)
Amit & Zott	*"A business model depicts the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities" (p. 4)*	- Value creation design - Content of transactions - Structure of transactions - Governance of transactions	(2001)
Chesbrough & Rosenbloom	*"The business model provides a coherent framework that takes technological characteristics and potentials as inputs, and converts them through customers and markets into economic inputs. The business model is thus conceived as a focusing device that mediates between technology development and economic value creation" (p. 532)*	- Competitive strategy - Market segment - Value proposition - Value chain (structure) - Value network (position) - Cost structure and profit potential	(2002)
Magretta	*"The business model tells a logical story explaining who your customers are, what they value, and how you will make money in providing them that value" (p. 4)*	- Value to customer - Customer definition - Economic logic - Revenue logic	(2002)
Osterwalder, Pigneur & Tucci	*"A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing, and delivering this value and relationship capital, to generate profitable and sustainable revenue streams" (p. 17)*	- Core competency - Value configuration - Cost structure - Revenue model - Value proposition - Distribution channel - Target customer - Partner network - Relationship	(2005)
Shafer, Smith & Linder	*"Business is fundamentally concerned with creating value and capturing returns from that value, and a model is simply a representation of reality. We define a business model as a representation of a firm's underlying core logic and strategic choices for creating and capturing value within a value network" (p. 202)*	- Strategic choices (strategy, competitors, value proposition) - Create value (e.g. resources, assets, processes and activities)	(2005)

		-	Capture value (e.g. cost, financial aspects, profit) - Value network	
Tikkanen, Lamberg, Parvinen & Kallunki	*"We define the business model of a firm as a system manifested in the components and related material and cognitive aspects" (p. 792)*	-	Material aspects: network, strategy and structure, operations, finance and accounting - Belief system: boundary beliefs, reputational rankings, industry recipe, products	(2005)
Voelpel, Leibold, Tekie & van Krogh	*"The particular business concept (or way of doing business) as reflected by the business's core value proposition(s) for customers; its configurated value network to provide that value, consisting of own strategic capabilities as well as other (e.g. outsourced/allianced) value networks; and its continued sustainability to reinvent itself and satisfy the multiple objectives of its various stakeholders" (p. 261-262)*	-	Value network configuration - Customer value propositions - Sustainable returns for stakeholders	(2005)
Chesbrough	*"The business model performs two important functions: value creation and value capture. First, it defines a series of activities, from procuring raw materials to satisfying the final consumer, which will yield a new product or service in such a way that there is net value created throughout the various activities. Second, a business model captures value from a portion of those activities for the firm developing and operating it" (p. 12)*	-	Target market - Revenue mechanism - Value proposition - Value chain - Value network or ecosystem - Competitive strategy	(2007)
Zott & Amit	*"A business model elucidates how an organization is linked to external stakeholders, and how it engages in economic exchanges with them to create value for all exchange partners" (p. 181)*	-	Value creation design - Content of transactions - Structure of transactions - Governance of transactions - Links to external stakeholders	(2007)
Johnson, Christensen & Kagermann	*"A business model consists of four interlocking elements (customer value proposition, profit formula, key resources, key processes) that taken together create and deliver value" (p. 52)*	-	Customer value proposition (e.g. target customer, job to be done, offering) - Profit formula (revenue model, cost structure, margin model, resource velocity) - Key resources - Key processes (metrics, rules & norms)	(2008)
Zott & Amit	*"The business model can then be defined as the structure, content, and governance of transactions between the focal firm and its exchange partners. It represents a conceptualization of the pattern of transactional links between the firm and its exchange partners" (p. 3)*	-	Transactional links to exchange partners - Structure of transactions - Governance of transactions - Content of transactions	(2008)
Santos, Spector & van der Heyden	*"A business model is a configuration of activities and of the organizational units that perform those activities both within and outside the firm designed to create value in the production (and delivery) of a specific product/market set" (p. 11)*	-	A set of elemental activities - A set of organizational units - performing the activities - A set of linkages between the activities - A set of governance mechanisms	(2009)

Nenonen & Storbacka	*"Business models are defined as configurations of twelve interrelated elements, covering market, offering, operational, and management viewpoints. The effectiveness of a business model in value co-creation is defined by the internal configurational fit between all business model elements and the external configurational fit between provider's and customers' business models" (p. 7)*	-	Market & Costumer definition Customer & brand Market & Costumer management Offering design & earning logic Technology Offering management & R&D Operations design Infrastructure, suppliers & partners Sourcing, production & delivery Management system Human & financial resources Management & leadership	(2010)
Zott & Amit	*"We have defined the business model as depicting the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities" (p. 219)*	-	Structure of transactions Content of transactions Governance of transactions	(2010)
Teece	*"A business model articulates the logic and provides data and other evidence that demonstrates how a business creates and delivers value to customers. It also outlines the architecture of revenues, costs, and profits associated with the business enterprise delivering that value. […] a business model defines how the enterprise creates and delivers value to customers, and then converts payments received to profits" (p. 172)*	-	Mechanisms to create value Select technologies and features to be embedded in the product Determine benefit to the customer from consuming the product Identify market segment Confirm available revenue streams Mechanisms to capture value	(2010)
Matzler, Bailom, Von den Eichen & Kohler	*"A business model define the way a company generates value (value creation) and how it captures some of this value as profit (value capture)"*	-	Positioning Product and service logic Value creation logic Marketing and sales logic Profit formula	(2013)
Saebi & Foss	*"We define business models as the content, structure, and governance of transactions inside the company and between the company and its external partners in support of the company's creation, delivery and capture of value" (p. 2)*	-	The content (i.e. the elemental activities) The structure (i.e. organizational units and the interlinkage between them) The governance of the transactions	(2015)
Fjeldstad & Snow	*"A business model frames the sources of effectiveness, efficiency, and agility as well as the firm's strategic domain" (p. 5)*	-	Value proposition Role of customers Value creation mechanisms Value appropriation mechanisms	(2017)

Table 1 - Definitions and concept elements of a business model (Modified from Nenonen & Storbacka, 2010; Saebi & Foss, 2015; Zott et al., 2011)

Value configurations

The first idea of value configuration logic, was described by Thompson (1967) that developed a typology based on organizational technologies. In recent years, the categorization has been further elaborated by Stabell and Fjeldstad (1998), in which they demonstrate how a majority of firms have trouble applying the value chain configuration. As such, their research identified the need for other configurations. The authors developed the concept into a typology that consist of three value configurations i.e., value chain, value shop and value network (Stabell & Fjeldstad, 1998). Recent literature on business model apply the value configuration as a contingency variable and argue how this influence all the properties of the business model elements (Fjeldstad & Snow, 2017) (table 2). More specifically, the authors suggest that the value configuration *"differ in respect to the role of the customer, the nature of value proposition to customers, value creation (the activities and resources used to create value and the economic factors that drive performance), and value appropriation (source of revenue and mechanisms that protect profits from innovation)"* (Fjeldstad & Snow, 2017, p. 3). Further, it is argued that implementing value configuration as a contingency variable will allow firms and the theoretical ground to be more clearly outlined and predictable (Fjeldstad & Snow, 2017) while at the same time, help provide intervention to uphold their competitiveness (Bader-Fuller and Morgan, 2010). On this basis, organizations must design and redesign their firm to enhance efficiency and effectiveness (Fjeldstad & Snow, 2017).

Value configuration	**Business model**					
	Value proposition	**Role of customers**	**Value creation mechanisms**		**Value appropriation mechanisms**	
Value chain	Product benefit	Recipients of products	Activities	Inbound logistics, operations, outbound logistics, sales and marketing, post-purchase service	Revenue mechanisms	Pay for product, pay for post-purchase service
			Resources	Brand, product, and process technology	Protection mechanisms	Patents, embodying technology in products or processes
			Economics	Cost economics of scale, value from differentiation		
Value shop	Promised solution quality	Co-producing clients	Activities	Problem-finding and acquisition, problem-solving, choice, implementation, evaluation	Revenue mechanisms	Pay for resource utilization, No-cure, no-pay licensing,
			Resources	Competencies, reputation,	Protection mechanisms	Status, patents
			Economics	Information asymmetry, learning and knowledge		
Value network	Connectivity and conductivity	Co-producing network members or owners of network nodes	Activities	Network promotion and contact management, service provisioning, infrastructure operations	Revenue mechanisms	Subscription and transaction fees, third-party payment, interconnection and roaming fees
			Resources	Networks (set of members or nodes)	Protection mechanisms	Lock-in from network externalities
			Economics	Direct and indirect network externalities		

Table 2- The business model elements and its relation to the value configurations (Adapted from Fjeldstad & Snow, 2017, p. 4)

Value chain

M. E. Porter (1985) and his well-known work on value chains is considered the foundation of the value chain framework, and describe this as the sole configuration for value creation relative to a firms competitive advantage (M. Porter, 1980; M. E. Porter, 1985). Firms with a traditional value chain move through a process of alterations, to all components of which together highlight the overall value that is created (Ramírez, 1999). These further link value structures of customers, partners and suppliers, in a sequent manner. In other words, the chain consists of a fixed set of primary and secondary activities of which these activities combined ensure that the framework is able to produce standard products, normally in large quantity (Stabell & Fjeldstad, 1998)(figure 3). Typical examples of value chain companies are traditional manufacturing firms.

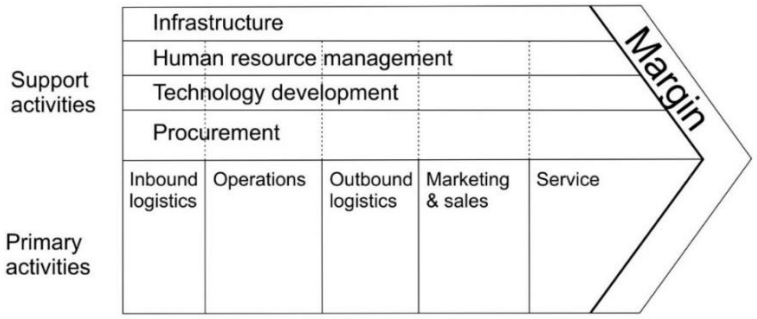

Figure 3 - The value chain diagram (Adapted from M. E. Porter, 1985)

Value network

The value network configuration makes the firm or nodes that the company control available for networking. A value network is intended to allow customers to co-produce value (figure 4), which means that firms are not only developing value for a single customer but multiple customer groups or segments (Fjeldstad & Snow, 2017, p. 4). Thompson (1967) define this as dependent on mediating technology. What separates value networks from traditional value chains is the configurations ability to make use of other firm's infrastructures. In other words, a network could be viewed as being paired on a horizontal level, hence linking nodes such as customers with physical objectives, i.e. the infrastructure layered on a vertical level (Stabell & Fjeldstad, 1998). What is important to understand is that the network together, provide a networking service. It is also important to understand that it is not the firm itself but the collective nodes that is controlled by the organization, that define the network (Stabell & Fjeldstad, 1998). Example of such industries include the finance and banking sector, transportation and communication services (Fjeldstad & Snow, 2017). Several Internet businesses such as eBay, Uber and Airbnb hold a value network configuration (Afuah & Tucci, 2001), where the value is dependent on who the

customer is able to connect with (Stabell & Fjeldstad, 1998). The companies benefit from these strong relationships through economics of scale, due to the low marginal cost which is related to the exchange transition or number of new users (Varian, 2000). This dual effect of size could effectively result in value networks that capture the entire market (Shapiro & Varian, 1999).

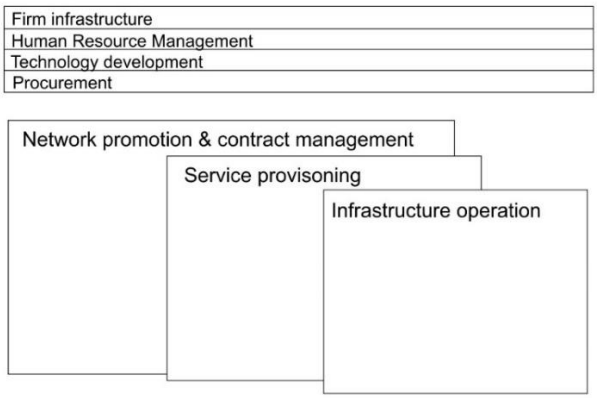

Figure 4 - The value network diagram (Adapted from Stabell & Fjeldstad, 1998, p. 430)

Value shop

A value shop is defined through problem-solving on a case-by-case basis, and dependent on intensive technology (Fjeldstad & Snow, 2017, p. 4; Thompson, 1967). Resolving customer problems are found within all industries, but what differentiates companies with a value shop configuration, is mainly related to firms with extensive expertise and tailor-made solutions that is aimed to solve the specific customer problems (figure 5). Stated differently, the customer value is not related to the specific product or solution itself, but instead the value of solving the overall problem. For this reason, the customer is often closely involved and engaged in the process (Fjeldstad & Snow, 2017; Skjølsvik, Løwendahl, Kvålshaugen, & Fosstenløkken, 2007). Once the firm has a clear understanding of the problem, the intensity of the activity development is determined (Stabell & Fjeldstad, 1998). Value shop configuration is typically found within industries such as law, consulting and engineering firms (Christensen, Wang, & Van Bever, 2013; M. W. Johnson et al., 2008). Fjeldstad and Snow (2017, p. 4) state how value shops "*form reciprocally linked value systems of referring, sub-contracting, and collaborating firms that together harness the knowledge required to develop the desired solutions. Status and intellectual property rights, in the form of patents or copyright, safe-guard value appropriation*". Further, Stabell and Fjeldstad (1998) describe how firms with a value chain logic as their primary activities could also adapt a shop logic to certain parts, for example in critical support activities of their business.

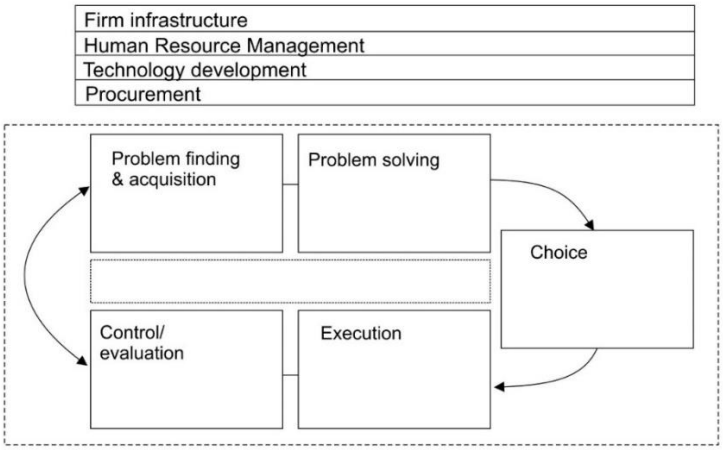

Figure 5 – The value shop diagram (Adapted from Stabell & Fjeldstad, 1998, p. 424)

In conclusion, what seems to be the common factor for all three configurations are the distinction between primary- and secondary process activities (Snow et al., 2017). Thus, Stabell and Fjeldstad (1998) proposed how all value configurations require factors such as logic and interactivity relationship, value structure, primary technology and activities that are also interdependent as well as main cost drivers. This also describe how firms may hold several configurations depending on the organizations value logic.

Business model innovation

Business model innovation as a multi-dimensional term, may be conceptualized as the principal theoretical framework to innovation. The added dimension is presented through innovation and *"occurs when firms improve their existing business models or introduce new ones"* (Fjeldstad & Snow, 2017, p. 5). Correspondingly, Zott et al. (2011, p. 1032) state how business model innovation "*complements the traditional subjects of process, product, and organizational innovation and involves new forms of cooperation and collaboration"*. Other have defined the term by stating how "*business model innovation is the discovery of a fundamentally different business model in an existing business*" (Markides, 2006, p. 20). What these definitions reflect, is how business model innovation is the mechanism used to reconfigure the dominant business logic of the firm (Prahalad & Bettis, 1986). Scholars have argued how innovation is already existent within the firm, and does not need to be acquired externally (Santos et al., 2009). Likewise, it is argued how business models form technology innovations and not the contrary (Fitzgerald, Kruschwitz, Bonnet, & Welch, 2014). For this reason, business model innovation concerns how to re-evaluate in what way firms deliver, create and capture value (Jong & Hartong, 2007; Saebi & Foss, 2015) is therefore closely linked to the firm's strategic orientation

and the decisions made by the organization (Miles et al., 1978). What this also implies, is the struggle to innovative already established business models as opposed to changing a single product or process potentially remote (Amit & Zott, 2012; Christensen et al., 2016; Fjeldstad & Snow, 2017).

In line with a number of authors, innovation to firms business models has been identified as a parallel and constant transformation to the various business model components (cf Amit & Zott, 2012; Taran et al., 2015). Teece (2010) state how innovating business models means transforming the firm's go-to-market paradigm. In accordance with this view, Amit and Zott (2012) debate how business model innovation goes beyond simple products and processes alteration. And while this is true, Teece (2010) further argue that for firm's to generate value, business model innovation should be supplemented with product- and service innovations. This point out how technology innovations maintain a strategic driver to how firms innovate their business models. Insightfully, Taran et al. (2015) research raised the question of when a transformation shift from being an organizational change to a business model innovation. This identifies two ways of observing business model innovation, either as an outcome or a process (cf. Christensen et al., 2016; Taran et al., 2015). Similarly, Zott et al. (2011, p. 24) separates innovation into either a source or a vehicle. Transformations to a firm's business model could also be separated into radical or incremental innovations (Achtenhagen, Melin, & Naldi, 2013; Markides, 2006; von den Eichen et al., 2015). While radical business model innovations redefine the market outlook and change significant portions of the business model elements (Markides, 2006). Incremental innovations on the other hand, concern minor adjustments to the current business model to handle the current market environment (Schneider & Spieth, 2013). Mitchell and Coles (2004) also distinguishes between various business model transformations by separating them into three different parts, these being innovation, replacement and improvement. While replacement is defined as a dominant improvement that affect the business model, innovation on the other hand is firstly attained once a collection of replacements show a market need that does not currently exist within the marketplace (Mitchell & Coles, 2004). This can be exemplified through how technology innovations that is launched to the marketplace, will lead to different results for firms operating with different business models (Teece, 2010).

Business model innovation is not only important as a concept, but also as a mechanism for creating growth opportunities beyond the company's existing capabilities, competitive advantage (Markides & D., 2004) or simply to tackle today and tomorrows challenges (Christensen et al., 2016; Fjeldstad & Snow, 2017; Teece, 2017). Amit and Zott (2012) explained

how having a perspective that is based on the company's business model would help organizations approach innovation from a more universal and organized outlook. This is in turn argued to assist companies to encounter new ways of tackling external change and their future strategic direction (Amit & Zott, 2012; Miles et al., 1978). The importance of understanding the value of business model innovation could be exemplified by Dell and Nespresso (cf.Björkdahl & Holmén, 2013; Matzler et al., 2013). Dell did not invent the first personal computer, nor did Nespresso sell the first coffee. Yet, what these companies did was to redefine their respective markets more specifically, home computer and coffee industry. This, by creatively rethinking the way of positioning, creating value and delivering of the product to the end-user (Björkdahl & Holmén, 2013; Matzler et al., 2013). This illustrate how business model innovation not necessarily requires innovation of a completely new product or service but instead, changes to the business model that alter the dynamics and competitive environment (G. Johnson et al., 2017). In other words, the innovation in itself can be regarded based on how the product or service is redefined and delivered, and also how the organization capitalize on that delivery (Björkdahl & Holmén, 2013; Saebi, 2016). The construction of the initial business model as well as new innovations to the business model are thus considered among the core-foundations of the organization (Teece, 2007). Hence, in order for firms to uphold their long-term profitability in today's transformative business environment, organizations must select and portray their dynamic capabilities based on the innovations and changes to their business models (Teece, 2017), and the degree of engagement related to value creation (Matzler et al., 2013).

In sum, the vast majority show how innovation of a firms business model is a result of either improving existing business models or developing new ones to act in accordance with their already existing business and its environment (Fjeldstad & Snow, 2017, p. 5). As such, succeeding a weak theoretical basis of business models, business model innovation indeed affects a substance for added theory progression (Fjeldstad & Snow, 2017; Foss & Saebi, 2017; Teece, 2010, 2017).

Types and barriers to business model innovation

Types of changes to a company's business model

Trends are arguably pushing forward the need to fundamentally change the traditional business models of organizations. However, despite the increased need to transform, scholars argue that there is very little understanding of what is the actual source to organizational renewal (cf. Christensen et al., 2016; Saebi et al., 2017). At present, the global scenery clearly illustrate a

shift where the probability of survival is dependent on the companies' ability and inclination to follow the new business conducts (Neus et al., 2017). Other research on organizational renewal has similarly shown how failure of choosing a path for the future proved a negative effect on their ability to perform and in worst case, led to closure (cf. Anand & Barsoux, 2017; Christensen et al., 2016). Saebi and Foss (2015) underline how the innovative change is meant to form industries, and markets alike. This for example, through generating innovations that are defined as being disruptive (cf. Christensen, 1997). Research has shown how today's firms respond by either adapting to these changes directly, or innovate their business models accordingly (Saebi & Foss, 2015).

Looking at the theoretical landscape, changes to existing business models are being referred to in several ways. Saebi et al. (2017) recorded concepts that are preferably used when explaining business model change and found that business model dynamics evolve around two distinct types. First, although often the most likely result from business model adoption is innovation (Doz & Kosonen, 2010; Saebi, 2014). Yet, it does not mean that innovation is a requirement (G. Johnson et al., 2017). This demonstrate how business model adoption might also be considered non-innovative (G. Johnson et al., 2017). On the other hand, the second type shows how business model innovation is often driven by both internal and external factors. This, in contrast to adoption that is regularly caused by external factors (Foss & Saebi, 2017). These two distinctions underline the fundamental differences that relate to motivating factors that cause adaption and innovation of business models (Saebi, 2014). The evolved viewpoint to firms business model alterations by being more dynamically driven due to environmental activities, has therefore been found to broaden the terms used to include transformation, innovation, evolution, adaptation, renewal and learning among others (cf. Aspara, Hietanen, & Tikkanen, 2010; Aspara et al., 2013; Casadesus-Masanell & Zhu, 2013; Doz & Kosonen, 2010; Markides, 2006; Saebi et al., 2017; Teece, 2010). Some of the main motivational factors for innovating the firm's business model is anchored in the perception of shaping the market or creating disruptive innovations (Christensen et al., 2016; Fjeldstad & Snow, 2017; Saebi et al., 2017). Opposed to this, the motivational factors that causes business model adoption is the response to externally changing market conditions, that lead the organization to align with the current market (Foss & Saebi, 2017). Hence, in order for firms to innovate their business model, organizations need to continuously evaluate and reflect upon factors that are both internal and externally driven (Christensen et al., 2016; Schneider & Spieth, 2013). This, to minimize the effect of change and enable growth (Christensen et al., 2016; Schneider & Spieth, 2013).

Barriers to business model innovation

Today, industries and markets are constantly changing and shift society, borderlines and the competitive nature of firms (Hagberg, Jonsson, & Egels-Zandén, 2017). These new fields of rivalry are meant to alter the landscape with competition from both inside and outside the markets of which these firms operate (Neus et al., 2017). Likewise, new technological solutions create a challenge for established companies and their business models (Christensen, 1997; Snow et al., 2017). What this illustrate, is the increased importance of innovating to maintain value and a competitive position (e.g. Casadesus-Masanell & Zhu, 2013; Santos et al., 2009; Taran et al., 2015), but also demonstrate the increased proportions of barriers that firms must overcome to survive (cf. Amit & Zott, 2001; Chesbrough, 2010; Saebi, 2014; von den Eichen et al., 2015). Despite individual skepticism, those firms who actively seek opportunities and new ways of innovating their business model, are also argued to be those that will yield competitive advantage and corporate value in the form of economic revenue and growth (e.g. Osterwalder et al., 2005; Saebi, 2016; Sosna, Trevinyo-Rodríguez, & Velamuri, 2010). However, it is also shown how most firms struggle to embark on transformational journeys related to adapting digital technologies and to a similar extent, uphold the continuous changes related to environmental shifts (cf. Christensen et al., 2016; Westerman, Bonnet, & McAfee, 2014). This could be exemplified by companies such as Polaroid and Nokia that failed to transform their business models according to the changing market, and thus end up crumbling into bits and pieces (Aspara et al., 2013; Tripsas & Gavetti, 2000). Therefore, capturing trends and understanding what the external shifts mean to the firms future operations are key to remain competitive in a dynamic environment (Bogner & Barr, 2000).

Theory show how the conceptual context and theoretical foundation cause difficulties for firms and its strategic decision-makers to properly implement and develop innovations to their business model (cf. MacKenzie, 2003; Saebi & Foss, 2015; von den Eichen et al., 2015). As such, certain factors recur as clear obstacles to their ability to innovate. These include, but are not limited to risk tolerance, cultural and leadership dimensions, flexibility, and the perception and understanding of the term itself (cf. Chesbrough, 2010; Chesbrough & Rosenbloom, 2002; Christensen et al., 2016; Doz & Kosonen, 2010; Sosna et al., 2010; von den Eichen et al., 2015; Zott et al., 2011).

Firms ability to consider and apply new, disruptive technologies are not recognized as the reason for why organizations are defined as disruptive (Chesbrough, 2010). Companies that are recognized as disruptive, is a result of their new or innovative business models that challenge the

existing market norms (cf. Amit & Zott, 2001; Christensen, 1997). This could be demonstrated through the statement from the former CEO of Intel, Andy Grove, which explain business model and its relation to disruptive technologies as "*disruptive technologies is a misnomer. What it is, is trivial technology that screws up your business model*" (Chesbrough, 2010, p. 358). A further example may be shown through the organizational behavior of Xerox Corporation. In the 1980's, the firm's research department aimed to create innovative technologies that was in line with the corporate business model of producing quick printers. This, with the purpose of increasing sales revenues in paper and toner sales (Chesbrough & Rosenbloom, 2002). The innovation of their research department was successful on several projects nonetheless, in certain cases their initiatives resulted in failed developments. It was found that the reason for these failures, were caused by how technologies were unaligned with the firm's business model. For this reason, despite being highly innovative, these technologies were released from the company's portfolio – claimed unfit for Xerox existing business model (Chesbrough & Rosenbloom, 2002). Interestingly, these 'unfit-projects' has later developed into successful corporations such as Adobe and 3Com. What this demonstrate, is how Xerox became blinded in the existing technology of their current business model. This prevented conflict with disruptive innovations that might be argued to have challenged the existing model through attempts of exploring opportunities founded in the disruptive technology (Chesbrough, 2010). Further, this illustrates how Xerox's innovative system and the different innovative processes that may be found in any firm, can represent potential barriers to a firm's ability to innovate. This, because of how firm's become blinded by their value configuration, the bureaucratic processes, organizational structure or caused by the lack of transparency within the organization in general (Fjeldstad & Snow, 2017; von den Eichen et al., 2015).

In view of this, it may show how obstacles to change lies in firm's ability to adjust the firms dominant logic (Prahalad, 2004; Prahalad & Bettis, 1986). More specifically, it is not only the environmental shifts but also to a great extent the organizations themselves that prevent business model innovations from succeeding (Christensen et al., 2016). Similarly, Fitzgerald et al. (2014) argues how firms might adapt technological solutions to their existing processes, however forget to challenge its value logic (Fjeldstad & Snow, 2017). As such, it highlights the need to build innovative cultures with a willingness to change (Aspara et al., 2013; Fitzgerald et al., 2014; Tikkanen et al., 2005). It has also been found how firms reluctance to change their business models lies in their unwillingness to invest in situations that expose the company to high risk(Christensen et al., 2016; Tripsas & Gavetti, 2000). Nonetheless it has been argued how the

end goal of not perusing change and innovation to firms business models will ultimately lead companies into an even greater risk (Christensen et al., 2016).

Taking a step back, Christensen, Grossman, and Hwang (2009) point out how business models by their very nature is not designed for change. This is supported by Fjeldstad and Snow (2017) that emphasize business model lack of flexibility. Along the same lines, other academics have linked company's inability to change to distinct causes such as organizational inertia, and how it weakens firms strategic agility and the rigidity of the model itself (cf. Doz & Kosonen, 2010; Tripsas & Gavetti, 2000). As such, it may also affect changes related to the 'go-to-market' paradigm (Doz & Kosonen, 2010; Teece, 2010). This corresponds with several scholars emphasis on flexibility throughout the entire business model (Christensen et al., 2016; Doz & Kosonen, 2010; Fjeldstad & Snow, 2017). What this may indicate is how business models should be regarded as a continuous circle both related to the process of modification and learning (cf. Teece, 2010; Zott et al., 2011).

Overall, the viewpoint of business model involvement and the relentless attention to the process of 'doing business', logically challenge operationalization and how to properly define the business model construct (Amit & Zott, 2001). Scholars have identified how firm's decision-makers must consider two dimensions in the innovative process, including design themes and design elements (Amit & Zott, 2001; Zott & Amit, 2010). Yet, it is argued how the renewal process is often found to be contradictory and in breach with the classic structure of the company´s assets, i.e. the dominant logic of the firm (Chesbrough, 2010). In other words, it might be argued how these often become blinders (Prahalad, 2004) to business model innovation (Fjeldstad & Snow, 2017). Likewise, the latent meaning of Zott and Amit (2010) business model construct is believed to reflect the firms cognitive aspect, more specifically "*business model design is a key decision for a new firm entrepreneur .. and a crucial - perhaps more difficult - task for managers charged with rethinking an old model to make their firm fit for the future*" (Zott & Amit, 2010, p. 216). The firm's attention and perspective on business model opens their ability to innovate in a more holistic and systematic manner (Foss & Saebi, 2018). This in turn, challenge companies to increase their horizon relative to a conventional view on competitors, customers and partners (Amit & Zott, 2012). As such, the ability to innovate business models is considered essential for firms to enhance their capabilities to handle rapid transformations within the marketplace and future growth that goes beyond the existing business (Christensen et al., 2016, p. 32).

2.1.3 Strategy and its relation to business models

Strategy as a term is both broad and ambiguous, and reflect the variability in its usage amongst literature and fields of research. Chandler (1962, p. 13) defined strategy as "*the determination of the long-run goals and objectives of an enterprise and the adoption of courses of action and the allocation of resource necessary for carrying out these goals*". Mintzberg (1994, p. 3) on the other hand, defined strategy as "*[…] a pattern in a stream of decision*". M. Porter (1980, p. xvi) stated that "*developing a competitive strategy is developing a broad formula for how business is going to compete, what its goals should be, and what policies will be needed to carry out those goals*". Despite the variety in their definitions, all three scholars highlight important contributing factors that lead to the creation of a business strategy. M. Porter (1980) perspective on strategy is more direct, as it focuses on the deliberate choices and competitive nature of the business environment itself. In contrast, Chandler (1962) emphasize the importance of goals and objectives related to allocation of resources. Mintzberg (1994) as a third, argues how strategy has several meanings, and that strategies often reflect multiple decisions, which are then bounded together in a familiar pattern or strategy (G. Johnson et al., 2017). Recent organizational literature, adopt the sum of the former and accordingly, describe strategy relating to the main future issues of an organization and further outlines a firms scope and direction in the long-run (G. Johnson et al., 2017). This, by giving the organization an advantage through configuring the resources within a dynamic and changing market environment to fulfil the expectations of the shareholders and the market needs (G. Johnson & Scholes, 1999). Overall, these sets of concepts, policies, arguments and actions are measures that all feed into the definition of a business strategy (Rumelt, 2011).

Strategy identifies and broadly maps out the terms and how the company will compete in the market environment. However, organizational strategy is not only influenced by the external environmental forces and availability of resources, but also by the expectations and values of the organization. Strategy can therefore be seen as a reflection of the attitude, thoughts and beliefs of the strategic decision-maker e.g. executives and top managers who navigate the firm and its strategic direction (G. Johnson & Scholes, 1999; Miles et al., 1978). In other words, it is the environment that sets the premises for organizational survival. The magnitude of the market conditions are separated into several levels including the macro-environment, industry, competitors as well as the internal organization (G. Johnson et al., 2017).

In developing a strategy, there are three main components that is considered to feed into the creation. These components are defined as strategic content, strategic context and strategic process (e.g. de Wit, 2017; G. Johnson et al., 2017). First, the strategic choices refer to the combined choices and any decisions that the top management is exposed to, related to the future of the organization. The strategic options lead to the strategic questions, such as what should be or what is the firm's strategy (de Wit, 2017). The way that the organizational strategies arise, are known as strategic processes. The second component therefore concern the who, when and how part of strategy (de Wit, 2017). Third and lastly, the strategic context sets the premises for both strategic processes and strategic context to arise, and relates to the internal and the external context of the organization (de Wit, 2017; G. Johnson et al., 2017). Strategy can include multiple levels within a firm and may potentially involve multiple companies on a network level. The lowest level of a strategy could however involve an individual personal tasks, whilst the highest level incorporates all people and ranks in an organization (G. Johnson et al., 2017).

Burgelman (2002) is significant in defining the strategy process based on two different approaches, either induced or autonomous. The autonomous strategy process mentions the 'internal-ecological' and how developed process take place throughout the entire organization (Burgelman, 2002). The elements of the business model are always covered in these organizational processes. On the other hand, the induced strategy process shifts to a higher level and thus represents the organizations executives and top management team, which focus on the strategy processes which are greatly focused. Within these organizational processes business model elements are less dominant and usually only covers one or very few. In line with this, Rumelt (2011) link business models and strategy in stating how the components that make up strategy must be consistent and appropriately aligned just as business model and strategy must be in line with each other. Even though the two elements have different approaches, it is nevertheless shown how they generally develops along the same lines, and especially in factors such as organizational operations, culture and structure (Rumelt, 2011). Different methods to strategic content has fluctuated from the broadly referenced Miles et al. (1978) typology, generic strategies presented by M. Porter (1980), the conventional planning perspective (e.g. Kenneth R. Andrews, 1971; Kenneth. R. Andrews, 1980; Ansoff, 1965) and more recently, strategy approached through evolutionary and emergence (e.g. Burgelman, 2002; Mintzberg, 1987).

Academic literature demonstrate close semantic relationship between the use of the term strategy and business model, yet the inter-relationship is found to remain ambiguous (cf. Foss & Saebi, 2018; Massa, Tucci, & Afuah, 2016). Several researchers that has previously defined business

models, have also integrated corporate strategy (e.g. Chesbrough & Rosenbloom, 2002; Rumelt, 2011). Moreover, Casadesus-Masanell and Ricart (2010) state how the organizations strategy is revealed in their business model. This explains how the business model is the basis for the business plan, and a crucial part of assessing a firm's stability. Teece (2010, p. 179) further argue that "a business model is more generic than a business strategy. Coupling strategy and business model analysis is needed to protect competitive advantage resulting from new business model design". This strengthen how the selection of a business model is closely aligned with the overall strategy and paves the way for competitive strength and value creation (Casadesus-Masanell & Ricart, 2010). As such linking the relationship, business model may simply be defined as the way of creating value and running a business (e.g. Fjeldstad & Snow, 2017; Shafer et al., 2005; Voelpel et al., 2005; Zott & Amit, 2010), whereas strategy develop that route giving it direction and meaning (Casadesus-Masanell & Ricart, 2010).

The firm's strategic orientation

Miles et al. (1978) designed the adaptive cycle as a method to describe manager's strategic mind-set and the reflection of the strategic-choice perspective of a firm. The adaptive cycle explains a low-level strategy, of which strategy is not anchored to a given point in time. This demonstrate that the way of driving organizational renewal is revealed through how the firm adjust to the market environment over time.

> *"Essentially, proponents of the strategic-choice perspective argues that organisational behaviour is only partially preordained by environmental conditions and that the choices which top managers make are the critical determinants of organisational structure and process. Although these choices are numerous and complex they can be viewed as three broad "problems" of organisational adaptation: the entrepreneurial problem, the engineering problem and the administrative problem."* (Miles et al., 1978, p. 548)

Organizations adoption process is seen as continuous and aims to solve three complications. The first being the engineering problem, which addresses how to configure activities and resources to deliver product and services. Secondly, the entrepreneurial problem refers to how products should be delivered to various customers and markets. Third, the administrative problem on how the firm should organize, so that the firm is able to balance the two aspects of leading and lagging, i.e. aspects of operating their business appropriately (cf. Miles et al., 1978). Accordingly, it is described how there exist four types of managers which govern the firm's strategic orientation and that each firm mainly fit one of the four typological characters (Miles et al., 1978). The

various approaches are problem-solving strategies applied as organizations move through the adaptive cycle. As a result, their organizational behavior becomes predictable related to their strategic typology (Miles et al., 1978; Snow, Fjeldstad, Lettl, & Miles, 2011), First, defenders are classified as firms that operate in predictable and stable markets and leverage from its core-competence and established product line, as a result these firms devote significant attention to protect its market (Miles et al., 1978; Snow et al., 2011). Second, organizations defined as prospectors are identified as innovative companies that constantly strive search for new opportunities and maintain their position as first-mover into new markets (Miles et al., 1978). Third, the analyzers are characterized by their ability to adapt the strength from both the defender and prospectors, these organizations are defined as firm's that indent to maximize their profit whilst minimizing their risk (Miles et al., 1978; Snow et al., 2011). The fourth and last strategic direction identify firms as reactors. This is considered as organizations without consistency in their strategic approach and often reacts aggressively in the aftermath of failed attempts to change according with the market (Miles et al., 1978).

The analysis that feeds into the development of a business strategy further leads to the various choices of the company's strategic decision-makers. This, in terms of selecting a certain type of business model, approach for going to market and the appropriate market segment (Teece, 2017). The top management team, and their strategic orientation are considered important factors that lead to the creating of the business strategy (cf. Chatterjee & Hambrick, 2007; T. S. Cho & Hambrick, 2006; Hambrick & Mason, 1984; Miles et al., 1978; Narayanan, Zane, & Kemmerer, 2011). In light of this, it could be seen how the creation of a strategy is not the objective itself, but rather the means for an organization to accomplish its specific objective (de Wit, 2017).

2.1.4 Organizational behavior

Upper echelon theory

In strategic literature, authors such as M. Porter (1990) describe organizational change as a consequence of fluctuations in the external market e.g. economic, social, technological and environmental factors. In contrast, upper echelon theory states how organizational change is led by the upper echelon, i.e. top managers, and reason how these reflect the business outcome (Finkelstein & Hambrick, 1990; Hambrick & Mason, 1984). The theoretical concept advocates how the top manager's antecedents and characteristics estimate the organizational performance level, in addition to the choices that the firm take (Carpenter et al., 2004; Ting, Azizan, & Kweh, 2015).

Upper echelon theory is built by two complementary parts. The first part addresses how the (*i*) decision-makers actions are anchored in their personalized interpretation of the environment or the strategic situation they are confronted with. Second, (*ii*) the manager's cognitive construct of their interpretation is, according to the theory, a function of their antecedents such as, values, education, personalities and experiences (Carpenter et al., 2004; Hambrick, 2007; Hambrick & Mason, 1984) (figure 6).

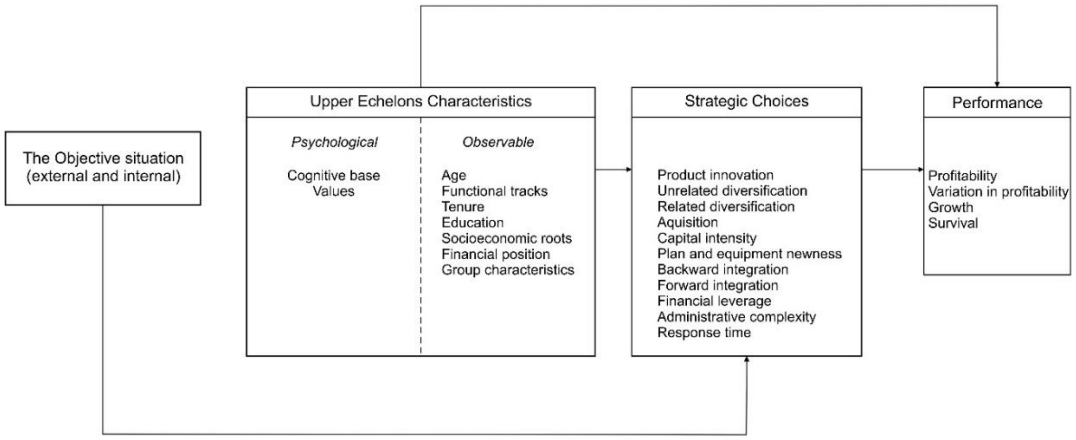

Figure 6 - An upper echelon perspective of organizations (Adapted from Hambrick & Mason, 1984, p. 198)

Initially, the theory was built on the premise of Simon (1955) psychological principle of bounded rationality. Human rationality is bounded due to individual's capacity to think, define time or interpret information and situations that are complex and uncertain (Kahneman, 2003). Theory claim that to understand an organizations action and behavior, the cognitive aspect must be considered. For instance, disposition and biases of the firms most powerful actors i.e. the upper echelons (cf. Hambrick & Mason, 1984; Kahneman, 2003). Empirical evidence supports the principal part of the theory. This, through how top manager's various characteristics, such as age, tenure, education or socioeconomic roots, is supposed to affect their strategic decisions-making (Carpenter et al., 2004; Finkelstein & Hambrick, 1990; López-Muñoz & Escribá-Esteve, 2017; Patzelt, Zu Knyphausen-Aufseß, & Nikol, 2008; Quttainah, 2015). In turn, this will further influence the firms strategy and organizational performance (Nielsen, 2010). Similarly, findings by Finkelstein and Hambrick (1990) revealed how demographic characteristics such as organizational tenure, that showed a substantial impact of the company´s performance and outcome. This in connection to strategic conformity, strategic persistence and performance consistency among others (Finkelstein & Hambrick, 1990). Outcome of such demographic indicators were shown through the top manager's personality and bounded rationality (Hambrick & Mason, 1984). What these indications are intended to illustrate, is how in situations exposed

to large parts of complex information, top managers are influenced by their experience, background and cognitive biases. The antecedents are applied to confront the decision problem (Carpenter et al., 2004; Hambrick & Mason, 1984), which is believed to be rooted in their interpretation of the situation. More specifically, their interpretation of the situation is reflected in their values and mental model (López-Muñoz & Escribá-Esteve, 2017). The strategic decision-making that is taken by the top managers are therefore influenced by their attention to confront objectives and bounded rationality based on their social, cognitive and physiological character (cf. Finkelstein & Hambrick, 1990; López-Muñoz & Escribá-Esteve, 2017; Ting et al., 2015).

The literature reflects how the perspective of upper echelon theory is characterized by several features. That together are collected into two main parts. According to Hambrick and Mason (1984) the first set of features, is revealed in the company's linear perspective. The linear perspective is described as a situation that is acted out by the decision-maker. This further lead to actions that are reflected through their strategic choices. As a result of these strategic choices, the firm´s performance is influenced by their managers (Carpenter et al., 2004) (figure 6). The second feature is defined as three set of principles that fundamentally underpin the theory. These principles include (*i*) how the cognitive basis and values of top managers are reflected in the organizations strategic decision-marking. Secondly, further (*ii*) conformable to demographic characteristics such as work-related experience or formal education. Lastly, (*iii*) the demographic characteristics control the individuals mental model and cognitive structure that end up influencing the organizational outcome (cf. López-Muñoz & Escribá-Esteve, 2017). Overall, the outcome of these principles frame the proposition by clarifying how the performance of a business is mirrored in their top management and executives (Carpenter et al., 2004).

Mental models

Mental models are defined as human being's cognitive representation of the reality. This enables them to engage and interact with the world surrounding them (Jones et al., 2011). Initially, the concept of mental models was firstly described by Craik (1943) that suggested how humans carry a small-scale model in their mind. This small-scale model was meant to be their reflection of how the world works (cf. Jones et al., 2011).

Mental models are broadly defined and underpinned by numerous categories to fully integrate people's illustration of their worldviews, e.g. identities, narratives, concepts. For this reason, mental model act as a reasoning mechanism that is applied by the individuals memory to

anticipate events or simply to handle complex information (Johnson-Laird, 1983). Mental models therefore provide the basis that newly acquired information is interpreted, filtered and stored in the human mind (cf. Arduin, Grundstein, & Rosenthal-Sabroux, 2015). More specifically, Jones et al. (2011) argue how mental model are functional rather than precise representation of the reality. This is evident in how people apply mental models as a simplified portray of the change and variations within the environment. And as a such, perceived as the cognitive instrument that individuals use in relation to decision-making, reasoning and behavior (Jones et al., 2011).

In addition to an individual mental model, the interpretation of its surroundings might as well expand. Based on a competitive environment and close engagement with suppliers and competitors, Hodgkinson (1997) found how executive's mental models ended in a repetitive cycle. The cycle effect occurred through competitive forces which positively influenced strategic performance, and subsequently altered the top management teams mental models (Porac, Thomas, Wilson, Paton, & Kanfer, 1995). Several scholars have conducted research on the collective aspect of cognition within similar industries and have found, a strong correlation for top manager's collective mental models from an inter and intra-organizational perspective (cf. Aspara et al., 2013; Porac, Thomas, & Baden-Fuller, 1989; Porac et al., 1995). Theory explain how social influence amongst top manager's, such as formal and informal communication is a mediating factor that cause development of shared mental models (DiMaggio & Powell, 1983). This is deeply established in the idea that shared interaction and subjection to the competitive arena may cause individuals to develop a similar set of collective mental models (Hodgkinson, 1997). This could be exemplified by findings from (Porac et al., 1989) that found how the human collectiveness overrides the cognitive differences among individual within a subgroup, when all actors are all were exposed to similar stable market environments (cf. Porac et al., 1989; Porac et al., 1995). Accordingly, collective mental models could also be exemplified from an internal perspective. For instance, a firm and its team members or within the leadership team, that is being exposed with similar daily routines might interlink their capabilities and overall cognitive state to which would develop a collective mental model for the group (Mohammed, Ferzandi, & Hamilton, 2010). This shows how, the leaders social interaction and influences, which is caused by an equal and stable impact from the external environment result in a sense of shared cognition (Mohammed et al., 2010). Opposed to this, when exposed to situations with dramatic change and high level of uncertainty (Bogner & Barr, 2000), research have found that companies and their upper echelons are confronted with different outcomes that causes the organization to remain

unchanged (cf. de Gooyert et al., 2014; Hodgkinson, 1997; Tripsas & Gavetti, 2000). The disruptive nature of the business environment poses a violation to the shared perception and therefore evidently breaks the collective mental model apart (Kaplan, 2008). This is a consequence that is rooted in how each individual actor interpret their surroundings, and therefore demonstrate a close alignment of managers within the industry and why the cognitive state disappears (Barr et al., 1992; Bogner & Barr, 2000).

Mental models in strategic decision-making

Research on strategic decision-making as a theme is extensive (e.g. Cyert & March, 1963; Mintzberg, Raisinghani, & Théorêt, 1976) and reveal a substantial amount of decision models (Das & Teng, 1999). Das and Teng (1999) explained how strategic decision-making is the process used by top management in organizations to conduct their most vital decisions. Mintzberg et al. (1976, p. 274) further explain how strategic decision-making is "immensely complex and dynamic and yet that they are amenable to conceptual structuring".

The complex business environment of which the firms are situated challenge top managers to depend on their simplified and bounded rational to understand such conditions (Cyert & March, 1963; Narayanan et al., 2011). Simplification of reality is caused by individuals limited capability to process data (Kahneman, 2003; Simon, 1955). This may be further elaborated through how top managers mental models assist their interpretation and sense-making in a given situation (cf. Bogner & Barr, 2000; Hill & Levenhagen, 1995; Thomas et al., 1993; Weick, 1995). This further leads to a simplified understanding and decision-making that is based on cognitive simplifications (Das & Teng, 1999; de Gooyert et al., 2014). This is evident, in situations where top managers are exposed with to complex information, it is shown how the use of mental models help guide their decision-making (cf. Chermack, 2003; Cyert & March, 1963; Johnson-Laird, 1983; Simon, 1955). This explains how mental models are dysfunctional relative to strategic processes and decision-making, especially when confronted with external shifts that are contradictory to the decision-makers already existing mental models (Barr et al., 1992; Bogner & Barr, 2000). Dependent on actor's antecedents, their mental model selectively focusses its attention on specific characteristics within the market environment or business, whilst ignoring others (T. S. Cho & Hambrick, 2006; Ocasio, 1997). The attention-based view is analogue to irrational behavior that for example investment managers practice in regards to buying, holding or selling stocks depended on their level of attention (Barber & Odean, 2008).

Organizations senior decision-makers are held accountable for the strategic future of the company and thus logically, base their strategic decision-making and choices on the external market environment (Chermack, 2003; Hodgkinson & Sparrow, 2002). By taking a further insight, the literature illustrates that although the strategic decisions are anchored in a future perspective, the outcome of these decisions are also grounded in their past (cf. Das & Teng, 1999; de Gooyert et al., 2014; Weick, 1995). Scholars have pointed out how path dependency provide guidance to firm's strategic orientation which further impact the organizations ability to adapt and change according to its surroundings (cf. Day, 1994; Gatignon & Xuereb, 1997; Lant & Mezias, 1992). If these trends are noticed, the top managers are influenced by their bounded rationality that in turn determine how the situation will be interpreted (de Gooyert et al., 2014; Kahneman, 2003). Similarly, others have described how these mental models are raised through a cognitive construct that is based on accumulation of past experiences (cf. Narayanan et al., 2011). This controls the outcome and interaction of external factors and the managements future strategic outlook (Narayanan et al., 2011).

Heuristics and biases

The dominant paradigm of strategic decision-making is the direct relation to individuals reality and bounded rationality (Kahneman, 2003; Simon, 1955). The important factor which deals with how decision-makers are limited by their own personal perception of reality (Simon, 1955) is widely discussed and recognized among scholars (e.g. Kahneman, 2011; Mintzberg et al., 1976; Simon, 1955). What this has indicated, is how rational behavior within strategic decision-making is far from always the case (Kahneman, 2011).

Heuristics and biases are recognized as one of the most important concepts in relation to individual´s deviation from rational decision-making (Tversky & Kahneman, 1974). These are cognitive mechanisms and decision rules that affects the subjective opinions that individuals use to support their decision-making (Tversky & Kahneman, 1974). According to psychological and behavioral economic literature (e.g. Kahneman, 2011; Thaler, 1985; Tversky & Kahneman, 1974), humans are known to depend on cognitive simplifications and judgmental rules, to simplify the complexity of their decisions. Empirical evidence from cognitive psychology have identified three heuristics that are considered the most profound when making judgements under uncertainty, e.g. availability of scenarios or instances, representativeness and adjustment from anchoring (Kahneman, 2011; Tversky & Kahneman, 1974). These judgmental rules are often useful and necessary however, by the nature of these heuristics they introduce cognitive biases into the decision-making process (Tversky, 1995; Tversky & Kahneman, 1974). Cognitive biases

are the negative bi-product of adopting heuristic, and thus at risk of causing systematic errors in the decision-making (Tversky, 1995). Biases could also lead decision-makers into achieving sub-optimal decisions in respect to maximizing utility (Das & Teng, 1999). The actor's cognitive simplification introduces biases into their assumptions of the strategic situation (Salaman, 2001). These are identified as factors that affect the strategic decision-making processes in organizations (Das & Teng, 1999; Schwenk, 1984), and include biases such as hindsight bias (e.g. Roese & Vohs, 2012; Tversky & Kahneman, 1974), anchoring bias (e.g. G. Johnson et al., 2017; Tversky & Kahneman, 1974), framing effect (e.g. Hodgkinson, Maule, Bown, Pearman, & Glaister, 2002; Tversky & Kahneman, 1981, 1992), and Dunning-Kruger effect (e.g. Dunning, 2011; Kahneman, 2011; Kruger & Dunning, 1999; Neus et al., 2017).

Threat rigidity and prospect theory

Humans react differently when confronted with market uncertainties such as opportunities and threats, gains or losses (e.g. Ocasio, 1995; Staw, Sandelands, & Dutton, 1981; Tversky & Kahneman, 1992). And it is stated how this reaction is affected by individuals mental models and their attitude towards risk (Tversky, 1995). In situations where individuals are opposed to threat, their reaction become influenced by stress and anxiety that could lead to risk-aversion (Staw et al., 1981) or risk-seeking behavior (Tversky & Kahneman, 1992). Risk-aversion that is caused by threat is found to lead companies to react rigid as opposed to change and adapt to the market environment (Richter, 2008). This phenomenon of inflexibility is identified as the threat-rigidity theory (Staw et al., 1981) that lead companies to decrease the company flexibility and increase their cost-awareness as a measure to confront the environmental threat (Ocasio, 1995; Staw et al., 1981).

Opposed to the individual's risk-averse behavior when confronted with losses or threats is the human reaction described by the Prospect theory. The theory is based on the notion of irrational behavior and the decision-makers judgements and choices when confronted with risk and uncertainty (Kahneman & Tversky, 1979; Tversky & Kahneman, 1974). The theory states that individual's decision preferences vary dependent on the situation the problem is framed to the actor (Tversky & Kahneman, 1986). This phenomenon is identified as the framing effect describing that the different outcomes of the framing option (e.g. threat or opportunity) will result in predictable choices (Tversky & Kahneman, 1992). Human beings are generally averse to losses (Kahneman, Knetsch, & Thaler, 1991; Novemsky & Kahneman, 2005), and thus prospect theory describe that under both uncertainty and risk, the situation of framed as loss yields higher disutility, i.e. perceived as more painful to individual, compared to the positive utility obtained

from gains (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992). Therefore, according to prospect theory, the key principles of human behavior under risk and uncertainty could be described by the value function (figure 7). The reference point is identified as the origin and refer to the individual's status quo, the x-axis presents the framing option (e.g. losses, threats, gains or opportunities), and the y-axis describe the utility being negative or positive (Kahneman & Tversky, 1979). The important aspect of prospect theory refer to the phenomenon that gains are presented as concave in the value function, whereas losses are illustrated as steeper and convex (Tversky & Kahneman, 1992). This therefore means that, for individuals to regain their reference point, their aversion to loss leads them to become risk-seeking when confronted with a situation framed as potential loss (Kahneman & Tversky, 1979; Novemsky & Kahneman, 2005; Tversky & Kahneman, 1992). In contrast, individuals become risk-averse when subjected to situations framed as positive, as actors become protective of their obtained gains (Kahneman & Tversky, 1979).

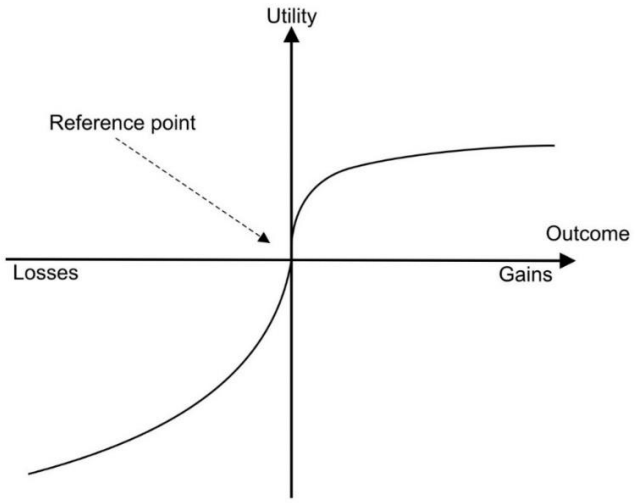

Figure 7 - The value function in prospect theory (Adapted from Kahneman & Tversky, 1979)

Mental models and the struggle to let go

Cognitive inertia

Senior manager's mental model and their cognitive representation, are often anchored in historic and prior experience, contrary to knowledge adapted from the current market (Tripsas & Gavetti, 2000). For this reason, top managers could have trouble in adapting their mental models in situations where the perspective of a historic business environment influence development of new opinions in rapidly changing environments (Barr et al., 1992; Bogner & Barr, 2000). This could be exemplified by todays industry, which is moving even faster and independent than what

people have experienced ever before. As previously mentioned, the mental model of top executives reflect and influence firm's performance (Hambrick & Mason, 1984). And as such, senior manager's mental models and biases could lead to cognitive inertia (e.g. Doz & Kosonen, 2010; Kahneman et al., 1991; Neus et al., 2017; Tripsas & Gavetti, 2000). Cognitive biases such as functional fixedness (Neus et al., 2017) and status quo bias (Kahneman et al., 1991) are argued problematic in cases where managers find themselves subjected to uncertainty (Bogner & Barr, 2000; Hodgkinson, Bown, Maule, Glaister, & Pearman, 1999), and therefore might result in organizational inertia (Hopkins, Mallette, & Hopkins, 2013; Reger & Palmer, 1996; Tripsas & Gavetti, 2000). This has been particularly evident in the face of radical changes such as technological change or extreme transformation in the business environment (Bogner & Barr, 2000). Inertia could lead firm's to stop responding to market feedback, yet continues the operational processes along the same trajectory, not taken into consideration how the market may be indifferent about the company's offerings (Neus et al., 2017; C.-Y. Tsai, Lin, & Fang, 2008).

Mental model renewal

Mental model renewal is considered particularly important especially to organizations that are exposed to turbulent and complex market conditions (de Gooyert et al., 2014; Narayanan et al., 2011; Reger & Palmer, 1996). Prior research claim how companies are more likely to conduct strategic mistakes in market conditions that are defined as unpredictable or complex (Reger & Palmer, 1996). This, due to firm's difficulty of renewing their mental models in accordance with the fluctuations and pace of such environmental shifts (cf. Hodgkinson, 1997; Porac et al., 1989; Porac et al., 1995; Reger & Palmer, 1996; Tripsas & Gavetti, 2000). Thus, frequent advancements within the business environment cause managerial cognition to lag behind on change within external- and internal environments (Narayanan et al., 2011). Examples of firms that have shown to strategically fail because of retaining or being unable to renew their mental models, include Nokia, Polaroid and Kodak (Aspara et al., 2013; de Gooyert et al., 2014; Tripsas & Gavetti, 2000).

Research conducted by de Gooyert et al. (2014) on strategic cognition is significant in that it illustrate how executives and senior management with industry specific experience, had a negative effect on renewing their mental models. Similarly, Grimm and Smith (1991) found that young managers and those with less organizational tenure are more acceptable for changes and likely to alter their business strategies to the environmental conditions. These studies indicate how the renewal of mental model may act as a mediating factor related to the subject of industry

experience and in turn, influence the firm´s strategic change (de Gooyert et al., 2014; Grimm & Smith, 1991). Consequently, senior managers with substantial amount of industry related experience indicate a greater reluctance to renew their mental models, and therefore deprive the ability of firms to conduct strategic changes in line with the turbulent and dynamic market environment (de Gooyert et al., 2014). Overall, the firm´s upper echelon depends on their current mental models and inability to renew these to conduct strategic decisions that are based on change initiatives (Andersson & Van der Heyden, 2016; de Gooyert et al., 2014).

2.1.5 Business model innovation and the role of mental models

Theory has demonstrated how a firm's response to change rests on the cognitive perspective of organizational behavior. The firm's decisions and actions are therefore controlled by the sense-making that top managers make of their surroundings (cf. Barr et al., 1992; Thomas et al., 1993; Tripsas & Gavetti, 2000). What this shows, is how the cognitive state of the top manager link organizations activities and outcomes to the external shifts and individual decisions. This indicate a close linkage to personal interpretation of any given information (Ocasio, 1997), and why firms behave the way they do (Hambrick & Mason, 1984). And as such, business models are merely a reflection of top management's assumptions (e.g. Doz & Kosonen, 2010; Teece, 2010; Tikkanen et al., 2005). This articulation shapes the firm's way to generate, capture and distribute value relative to customers' requirements (Aspara & Tikkanen, 2013; Zott & Amit, 2010). This notion demonstrate how business models are a dynamic adoption that respond externally to the market environment (Saebi & Foss, 2015), and also reflect an internal context through the renewal of the top manager's mental models (de Gooyert et al., 2014; Tikkanen et al., 2005).

Christensen et al. (2016) argue the influence risk has on firm's ability to innovate their business model. Linked to the firm's strategic decision-makers and mental models such investments are often considered to be of too high risk for their organization, and as a rational behavior avoids such situations (e.g. Das & Teng, 1999; Tripsas & Gavetti, 2000; Tversky & Kahneman, 1974). In contrast, prospect theory describe individuals irrational behavior (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992) whereas top manger's confronted with threat, will become risk-seeking as opposed to risk-averse when exposed to opportunities (Chattopadhyay, Glick, & Huber, 2001). Other empirical findings illustrate how firm's adapt their business model relative to threats and opportunities (Saebi et al., 2017). This indicate how companies reluctance to innovate could be a caused through difficulties of renewing top manager's mental models (Barr

et al., 1992; de Gooyert et al., 2014) in accordance with shifts in external- or internal conditions (cf. Hodgkinson, 1997; Hodgkinson & Wright, 2002; Narayanan et al., 2011; Tripsas & Gavetti, 2000). Therefore, overcoming cognitive inertia or other biases are vital to prevent firms from missing opportunities, losing their market position or innovating their business models (Hodgkinson & Wright, 2002; Hopkins et al., 2013; Kahneman et al., 1991; Neus et al., 2017; Reger & Palmer, 1996; Tripsas & Gavetti, 2000).

Recent industry reports have also shown to how the aspect of top managements perception relative to business models and notion of digitalization in general, has shifted over the last few years (Alm et al., 2016; Pohle & Chapman, 2006). In line with recent industry reports PwC (2017a) indicate a renewal process of the managers strategic mindset. For instance, it was found how 55 per cent of executives considered new business models to result in a higher level of competitive advantage opposed to innovating new products (Economist Intelligence Unit, 2005). As such, CIO of Komatsu Australia, Malcom Barnes describe the importance of recognizing business model innovation as the primary objective, and that "*pure product advantage – at best – is short-term*" (Economist Intelligence Unit, 2005, p. 2). Similarly, IBM's Global CEO study found that more than 40 per cent drive business model innovation. Accordingly, 30 per cent had a higher focus on business model innovation than operational and product innovation (Pohle & Chapman, 2006). What this might demonstrate, is a close alignment with the upper echelon theory through how innovation is orchestrated by the top management team (Hambrick & Mason, 1984). Likewise, other studies found how more than half of senior executives are confident in their own abilities related to digitalization, both globally and on a Nordic scale (Alm et al., 2016; PwC, 2017a). This illustrates how the self-recognition of their own abilities had a 12 per cent decrease from 66 per cent in 2014, compared to 54 per cent in 2016. These findings are interesting, due to how technology grow exponentially (cf. Denning & Lewis, 2017; Moore, 1965), and therefore should reflect upon their knowledge (Haynie, Shepherd, & Patzelt, 2012). However, the results show how their exposure to digital technologies has made them self-aware to their lack of competency (Roese & Vohs, 2012). The top manager's overconfidence, without recognizing their deficits, seems to be consistent with the cognitive biases such as, the Dunning-Kruger effect (cf. Dunning, 2011; Kruger & Dunning, 1999). Similarly, academic research has shown that unawareness and overconfidence to own abilities, are components that could act as potential barriers to business model innovation (Chesbrough, 2010; Teece, 2010). Although the importance of leading digital change is acknowledged, it might be assumed that the executives are reluctant to change due to their ignorance to their deficits (Kruger & Dunning, 1999; Neus

et al., 2017). As a result, this may lead them to believe that they are managing just fine, or to become cognitive inert that could cause the organization to remain in status quo (Andersson & Van der Heyden, 2016; Doz & Kosonen, 2010; Tripsas & Gavetti, 2000). Consistent with this, research has also found how leaders without the appropriate knowledge could either be reluctant to alter the status quo, behave too eagerly to transform or unaware of the terminology itself (von den Eichen et al., 2015). As such, it might be argued that no matter the outcome, without the appropriate knowledge and experience, these factors will essentially lead the organization in the wrong direction (Saebi, 2016).

Overall, for organizations to maintain competitive it is required that they alter their strategic direction and transform the business model in line with the market conditions (cf. de Gooyert et al., 2014; Miles et al., 1978; M. Porter, 1990). In light of this, the top management team, being a reflection of the organizational performance (cf. Carpenter et al., 2004; Hambrick & Mason, 1984), it is argued how these strategic decision-makers need to adjust and modify their current mental models accordingly (de Gooyert et al., 2014). For this reason, and to be able to accomplish a transformation, the process does not exclusively rest on renewing the business model alone, but also on renewing the strategic decision-makers mental models accordingly (cf. de Gooyert et al., 2014).

2.2 Summary of the main theoretical perspectives

The following sub-chapter will summarize the main theoretical perspectives and further propose a framework that aim to describe how these are interrelated in the context of the research question.

Theory has shown how a business model is merely the way of creating value and running a business (e.g. Shafer et al., 2005; Voelpel et al., 2005; Zott & Amit, 2010), whereas strategies develop the route that gives it direction and meaning (Casadesus-Masanell & Ricart, 2010). The company's top managers are also strongly linked to the organizations strategic action and operational performance (e.g. Barr et al., 1992; Chatterjee & Hambrick, 2007; T. S. Cho & Hambrick, 2006; de Gooyert et al., 2014). More specifically, the individual's mental model and their interpretation of the business environment influence the firm's ability to conduct rational strategic decisions (Bourgeois & Eisenhardt, 1988; Hodgkinson et al., 1999; Ocasio, 1997; Schwenk, 1984; Tversky, 1995). This consequently influence the organizational outcome (Carpenter et al., 2004; Chermack, 2003; Cyert & March, 1963; Hambrick & Mason, 1984) and their ability to transform (Aspara et al., 2013; Barr et al., 1992; Tripsas & Gavetti, 2000).

Considering this, it could be argued that the systematic assets of the value configuration logic (Fjeldstad & Snow, 2017; Miller, 1986; Stabell & Fjeldstad, 1998) constitutes the choices and outcomes undertaken by the organization. Similarly, one could say that mental models exist for the change and innovation of business models (Vorbach, Wipfler, & Schimpf, 2017).

Mental models creates a cognitive construct that is built on individual's antecedents, experiences (Jones et al., 2011; Narayanan et al., 2011; Weick, 1995) and values (Carpenter et al., 2004; Hambrick & Mason, 1984). As such, it is stated how the firm's upper echelons mental models characterize both the operational and conceptual mind-set that is shaped through interaction and engagement of complex processes (Hill & Levenhagen, 1995; Johnson-Laird, 1983; Jones et al., 2011; Young, 2008). This may influence the firm's strategic orientation based on their path dependency (cf. Barr et al., 1992; Day, 1994; Gatignon & Xuereb, 1997; Lant & Mezias, 1992; Saebi et al., 2017; Thomas et al., 1993). As such, the organizational outcome might therefore reflect their strategic orientation (Barr et al., 1992; Chattopadhyay et al., 2001; Das & Teng, 1999; de Gooyert et al., 2014; Kaplan, 2008). What this demonstrate, is the dynamic nature of business models and how it responds externally to the threats and opportunities that influence the market conditions (Saebi & Foss, 2015) and from an internal context through the top manager's mental models (Tikkanen et al., 2005; Vorbach et al., 2017). Similarly, scholars have found how business models are merely a reflection of top manager's assumptions (Doz & Kosonen, 2010; Teece, 2010), and how their decision-making reflect the operative function of the model (Aspara et al., 2013; Miller, 1986; Tikkanen et al., 2005). In other words, for business model innovation to take place, the firm's top management need to be responsive in the operational and dynamic measures that constitute their business model (Fjeldstad & Snow, 2017; Pohle & Chapman, 2006).

To provide the reader with an illustrative representation of the research question and how the main theoretical perspectives is connected, a theoretical framework has been developed (figure 8). As opposed to a material level i.e. a physical manifestation such as human resources and machines, the framework is rooted on a cognitive level in which represents an idea of something. Based on this, the innovation of business models is therefore presented through a cognitive model. The business itself reflect an actual physical-object that is either a result of a business model or described by making use of the business model itself. The firm's value configurations is therefore considered an abstraction that is based on the activities within a business relating to the material aspect performed by people and machines (Fjeldstad & Snow, 2017; Stabell & Fjeldstad, 1998).

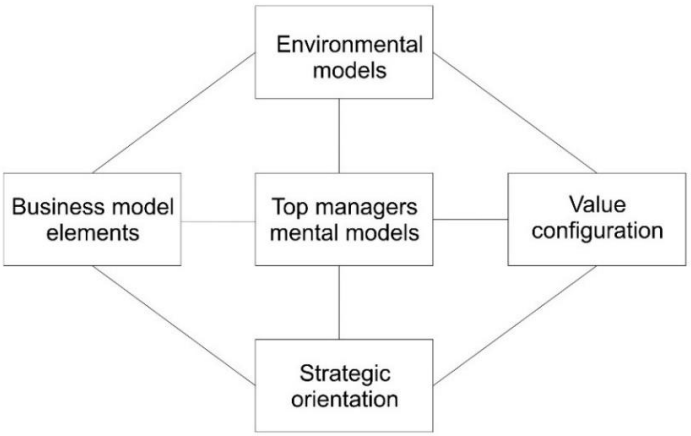

Figure 8 - The cognitive aspect of business model innovation

Firms need to be responsive in their management of both operational and dynamic measures that constitute their business models (Fjeldstad & Snow, 2017; Pohle & Chapman, 2006). For this reason, the firm's business model, i.e. the operational dimension construct what the business is, whilst the strategic orientation of firm, i.e. the dynamic dimension establish the structural meaning of what the business wants to be (Miles et al., 1978). In sum, the firm's interaction with complex environments and the firm's dominant logic (Prahalad, 2004) is therefore believed to affect manager's mental models (Bogner & Barr, 2000; Daniels, Johnson, & Chernatony, 2002; Narayanan et al., 2011). This, in turn, influence the firm's ability to innovate their business model (Fjeldstad & Snow, 2017). As such, it is shown how the industry and company transformations require cognitive initiatives for building innovative cultures with willingness to change (Aspara et al., 2013; Fitzgerald et al., 2014; Tikkanen et al., 2005).

2.3 Evaluating the theory contribution

The sub-chapter will provide a critical assessment of modern theoretical contributions before justifying the research design, methodology and data source that is deemed appropriate for the thesis.

There is a steady increase associated with business model innovation, and how it results in positive outcomes for businesses such as a source of competitive advantage and value creation (cf. Foss & Saebi, 2017; Markides & D., 2004; Saebi, 2016; Zott et al., 2011). Naturally along with its popularity, the amount of literature contributions has increased. Yet, due to a substantially weak basis for a single definition, a proper progression within academia remains absent (cf. Fjeldstad & Snow, 2017; Foss & Saebi, 2018; Saebi et al., 2017; Zott et al., 2011). Through the business and management studies, this has shown to repercussions of successful

implementations and innovations to firms business models (Christensen et al., 2016). To date, there are only a few studies that has used large-scale studies to research business model innovation (e.g. Saebi et al., 2017; Schneider & Spieth, 2013). Findings demonstrate how most empirical studies on business model innovation seem to hold a micro perspective, and mainly use secondary data such as case studies (e.g. Aspara et al., 2013; Chesbrough, 2010; Doz & Kosonen, 2010; Sosna et al., 2010). On this basis, there is a clear indication and need for an enhance understanding and consensus within the field (Fjeldstad & Snow, 2017; Foss & Saebi, 2017; MacKenzie, 2003; Teece, 2017; Zott et al., 2011). This shows a need for further contributions that will allow for a holistic perspective on business model innovation, such as systematic and large-scale studies.

As a research topic, the concept of managerial cognition and its effect on organizations has gained increased attention in recent years (e.g. Aspara et al., 2013; Carpenter et al., 2004; Gerstner, König, Enders, & Hambrick, 2013; Kaplan, 2008; Narayanan et al., 2011; Tikkanen et al., 2005). What has become evident through organizational and management literature, behavioral economic theory and general psychological literature, is how these fundamentally explain issues that are rooted in the cognitive aspects of individuals, and more specifically, are able to indicate the importance of top manager's mental models and its role on organizational action. Most of these studies have applied a quantitative research approach (e.g. Barr et al., 1992; T. S. Cho & Hambrick, 2006; Kaplan, 2008; Kaplan et al., 2003), yet some have also focused on the cognitive aspect through the use of qualitative methods (e.g. Aspara et al., 2013; Hodgkinson & Wright, 2002; Tripsas & Gavetti, 2000). However, searching for managerial cognition requires isolation of the top manager's cognition from other probable causes (Kaplan et al., 2003). Because of this, several scholars have focused their research on unstable markets using a quantitative content analysis (cf. T. S. Cho & Hambrick, 2006; Kaplan, 2008; Kaplan et al., 2003). In contrast, studies have concentrated on stable environments (e.g. Porac et al., 1995) or made use of heterogeneous sampling, i.e. cross-industry data (e.g. Saebi et al., 2017; Thomas et al., 1993).

The literature review has made it evident how the concept of mental models and business model innovation, is relatively undescribed in the context of each other (Fjeldstad & Snow, 2017; Osterwalder & Pigneur, 2010; Osterwalder et al., 2005; Teece, 2010; Tripsas & Gavetti, 2000; Zott et al., 2011). The tangible aspect of a business model such as the resource-based view, value creating mechanisms or value appropriation (e.g. Amit & Zott, 2001; Chesbrough, 2010; Fjeldstad & Snow, 2017; Nenonen & Storbacka, 2010; Zott et al., 2011), as well as mechanisms

contributing to business model change including processes, facilitators and drivers (Achtenhagen et al., 2013; Amit & Zott, 2001; Andries & Debackere, 2013) are considered to be well established in academia. Opposed to this, literature on the intangible aspect of a firm's business model is considered relatively weak (cf. Aspara et al., 2013; Saebi et al., 2017; Sosna et al., 2010; Tikkanen et al., 2005). Although the dynamic environment has increased according to the interest of understanding how organizational action is influenced by the manager's cognition, it seems that very few have related strategic decision-making and their choices to senior managers and their mental models (Kaplan et al., 2003).

What the current theory contribution points to, is the need and necessity to understand how business model innovation is affected by top manager's mental models relative to uncertain market conditions. To the best of the authors knowledge, there are only a few studies that mention business models in respect to a cognitive perspective (cf. Aspara et al., 2013; Chesbrough, 2010; Doz & Kosonen, 2010; Saebi et al., 2017; Tikkanen et al., 2005; Tripsas & Gavetti, 2000; von den Eichen et al., 2015). On the basis of having evaluated the current theory contribution and clearly identified the research question, the study has chosen to use an exploratory methodology design and empirical research approach. By making use of empirical techniques, it is supposed that the study will be able to contribute to the body of already existing literature (Remenyi et al., 2002), hence contribute to a solid foundation to which future research can be built. The study aims to support the emerging literature on business model innovation as well as practical knowledge for organizations concerning managerial cognition and its influence on the innovation process of their business model.

3 Design and methods

3.1 Research design

Research design is central to the thesis, and reflect the strategies that has been selected to ensure accuracy and interpretability (Ghauri & Grønhaug, 2010). The sub-chapter will address the problem structure, research design and strategic choices that is believed to be most suitable for the study. This, with respect to the assignment constraints related to data collection and analysis. Finally, the research process will be assessed based on the main ethical considerations, reliability and validity.

Based on the problem structure and how the empirical research on the topics remains modest, the exploratory research design was selected for the study (Ghauri & Grønhaug, 2010). In accordance with an exploratory research question that seeks to understand and explain, i.e. how top manager's mental models affect the innovation to firm's business models, this is elaborated through a qualitative research strategy (Zhang & Wildemuth, n.a.; Zikmund, Babin, Carr, & Griffin, 2009). Compared to quantitative research that largely deals with quantification, qualitative research emphasize words in the collection and analysis of research data (Bryman & Bell, 2011). As such, a qualitative research strategy intends to explore and not predict based on aspects connected to the human mind or simply to a single issue (Bryman & Bell, 2011). For the purpose of the data collection, the research method had to allow for using existing theory. This, to provide understanding into complex models of the human mind. A longitudinal research study that made use of content analysis was therefore selected. The choice of a qualitative content analysis allows for a subjective interpretation that could identify patterns and themes of the empirical data. The qualitative nature was also in line with the deductive approach of the study (J. Y. Cho & Lee, 2014; Patton, 2002). Additionally, the study retrieved data on the chief executive officers and the firm's largest shareholders as a supplementary source. This to gain a greater understanding of the top manager's mental models and their antecedence over the six-year period. To clarify the entire research and to illustrate the interlinkage between the elements of the scientific process, a flow chart has been developed (figure 9).

Figure 9 - Flow chart of the research process

Firstly, the research process was prepared to ensure a suitable basis for defining the master thesis outline. Through relevant research on theory and academic literature, the suitability of the research question was confirmed. The phase was also central in ensuring that the study contained the appropriate theoretical knowledge of the subjects being examined. In the following step, the coding scheme was planned and designed for collecting the appropriate empirical data. The coding scheme is a critical part of the data collection, and was therefore carefully set up based on two main elements viz. design of the coding scheme and coding manual (Bryman & Bell, 2011). As a third step, the content analysis aimed to establish meaning, by gathering all appropriate sentences, paragraphs and nuances related to the themes being studied. Once the data collection was complete, the primary and supplementary sources were analyzed and discussed. The primary data was processed and interpreted in accordance with the coding scheme. This, to ensure a close linkage of relevant theoretical literature as well as replicability related to the results of the study. The fifth and final phase of the process was to conclude the research results. The conclusion was drawn based on former discussions of main findings that was anchored in a latent analysis structure. Based on this, the study intends to represent accurate and realistic conclusions.

3.1.1 Scientific theoretical anchoring

To coincide with the study context and problem structure a deductive research orientation and exploratory methodology design was selected. Correspondingly, the theoretical perspectives and ethical standpoint is believed to substantiate the use of a qualitative research method. To have a clear understanding of the problem structure and philosophic orientation is important as it naturally affects how knowledge is generated (Ghauri & Grønhaug, 2010). As such, this is supposed to fulfil the study context and correspond with the positivist philosophy and deductive approach (Saunders, Lewis, & Thornhill, 2012).

Through the theoretical anchoring, it is supposed that mutually independent researchers would be able to obtain the same results. To assess the credibility of the sources used, all source material has been carefully considered (Dalland, 2010). An example is the usage of the theoretical assessment tool Publish and Perish that allowed for professional reflection and source criticism through rating of the relevant literature. The source material was selected to answer the research question, context and assessed based on its credible nature. Also, scientific articles have primarily been obtained through leading management journals including Academy of Management Review (AMR), Administrative Science Quarterly (ASQ), Journal of Business

Strategy, Organization Science (OSc), Organization Studies (OSt), Strategic Management Journal (SMJ), Academy of Management Journal, Journal of Management and Journal of Management Reviews, Long Range Planning and Strategic Management Journal.

Lastly, in relation to ethical considerations, the study has carefully considered research procedures and other moral judgements. All material that is a result of the conclusion of the scientific research has therefore been clearly described and provided (e.g. instruments, methods and techniques) to ensure high degree of reliability.

3.1.2 Credibility criteria

The selected criteria for credibility outline a framework to which the study will be conducted, whilst binding together the researcher's decisions (Bengtsson, 2016). As mentioned in the previous sub-chapter, several measures have been taken to ensure a high level of credibility of the materials being used. This is intended to reflect the thesis openness to evaluation and criticism.

The subjective nature of the qualitative methods is known to hold the potential to limit the replicability of analysis (Bryman & Bell, 2011). Despite certain limitations and criticism of the research method being used, qualitative studies also hold significant characteristics related to their scientific quality (Zikmund et al., 2009). More importantly, the use of qualitative content analysis is claimed to diminish the threat of misperception in matters that is related to philosophical considerations and concepts (Braun & Clarke, 2006). Quantitative content analysis is well-known and considered to be an accepted methodology applied in research fields such as anthropology, sociology and psychology (Braun & Clarke, 2006; Polit & Beck, 2006; Weber, 1990). Despite the less frequent usage within business and management research, this is argued to be largely based on unawareness of appropriate usage rather than relevancy itself (Bryman & Bell, 2011). On this basis, the methodology that has been selected is believed to be suitable for the study.

It is recognized how the thesis might experience errors or omissions that can lead to unforeseen measures. Such errors may potentially impair or diminish credibility of the study (Bengtsson, 2016). For the purpose of this study the following three could be mentioned, (*i*) the resource- and (*ii*) time constrain related to research project, and (*iii*) how the analysis was conducted by one single researcher. To mitigate significant biases and misconceptions that could result in false

interpretation in the analysis, and reflect a suitable representation of the scientific research, several measures will be presented below.

To diminish potential bias within interpretation and the increased degree of replicability, the study maintain systematic and consistent by applying Bryman and Bell (2011) steps of a qualitative research approach (figure 10).

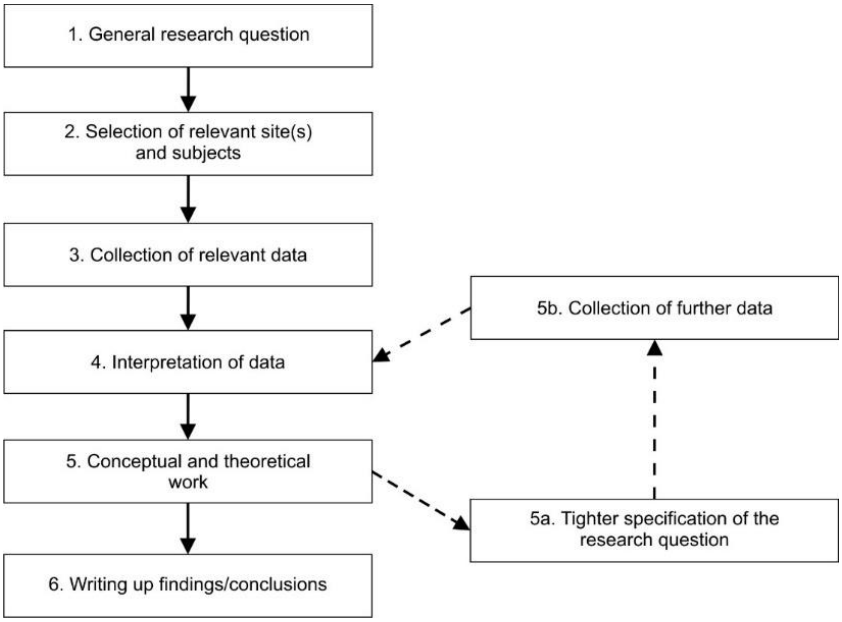

Figure 10 - An outline of the main steps of qualitative research (Adapted from Bryman & Bell, 2011, p. 390)

Also, to ensure reliability of the qualitative content analysis and to avoid rater bias within the coding scheme (Bryman & Bell, 2011), the Weber Protocol was implemented (Weber, 1990). By mainly using the protocol, an initial pilot-test was conducted on a sample of the text beforehand, and again as a final step of the process (appendix 1). This did not only ensure reliability, but also accuracy within the coding (Weber, 1990). The coding scheme was prepared based on the overall research question, and further grounded on well-established and peer-reviewed academic theories in their respective fields.

To avoid sample bias, it was also objectively selected companies with distinct similarities including industry, country and listed on the Oslo Stock Exchange (OSE). This ensured that the sample was confronted with the same market conditions and top management teams with relatively similar socioeconomic backgrounds (Hambrick & Mason, 1984). As they were all were listed on the OSE as five of the largest aquaculture firms, they also held corporate public data. Moreover, four of the firms from the sample population are listed on the benchmark index on the OSE and the market caps of the five companies are also listed among the 55 largest firms

in Norway (per March 2018). This is meant to be a significant representation of the Norwegian aquaculture industry, and thus intended to be transferable to the entire aquaculture industry (Krippendorff, 2013). This could be argued for several reasons, including (*i*) global presence in the industry; (*ii*) organizational size, i.e. size of operation, market share and market reach; and (*iii*) Norway being one of the leading seafood nations (Norwegian Seafood Council, 2018b; PwC, 2017c).

3.2 Research methods

The following section will identify the methods and techniques that has been used to collect data and further present the methodological requirements for the scientific research.

3.2.1 Qualitative data collection

The proceeding chapter have identified how empirical research within the theoretical fields being studied are modest. This underline the need to find out more about the managerial cognition and how it is affected by the internal context and external conditions. These are all characteristics that could be found in qualitative research methods (Bryman & Bell, 2011; Thagaard, 2009). The thesis has therefore implemented a qualitative technique and research method using content analysis as a primary source. In addition, the study retrieve data from the chief executive officers curriculum vitae and the primary investment segment from the firm's largest shareholder as a supplementary data source. This with the intent to further supplement the analysis with additional reflection on the upper echelons mental models and their antecedence.

Content analysis

By making use of a qualitative content analysis, the study subjectively interprets the content of text-data through corporate documentation, more specifically, corporate annual reports. This, to understand the attention to business model innovation through the top manager's mental models (Bryman & Bell, 2011). The study also has a need to understand how attention is developed over time, and therefore adapts a longitudinal research study. Compared to a cross-section research that focus on short periods and mainly examines how something is being done at a certain point in time, a longitudinal research span over several years (Bryman & Bell, 2011). Based on the selected methods and technique used, this is supposed to properly align with the positivistic orientation (Remenyi et al., 2002).

Analysis of firms annual reports have been applied in numerous studies to evaluate managerial cognition (e.g. Barr et al., 1992; Kaplan et al., 2003) and is recognized as an beneficial method for determining the level of attention that a firm places on certain topics (Bryman & Bell, 2011), such as business model innovation. Corresponding applications of the research method, yet in a quantitative manner, has been conducted by Chatterjee and Hambrick (2007); Gerstner et al. (2013), Kaplan et al. (2003) as well as by Kaplan (2008). These scholars all made use of company´s annual reports, interviews and press releases. In contrast to studying managerial cognition (e.g. CEO narcissism, attention to biotechnology) through quantifying the content (e.g. how often biotechnological words were mentioned in the annual report), the current study analyzes the firm's annual reports, for this study, annual reports, in its entirety. This, to understand the latent meaning of the reports (Bryman & Bell, 2011). Compared to a manifest analysis structure which provide broad surface and more precisely explain what the content actually contains, the latent analysis on the other hand allows for interpretation of the direct and latent meaning (Braun & Clarke, 2006) related to companies awareness and description of business model innovation (Kaplan et al., 2003). And for that reason, is also believed to ensure a deep structure analysis (Bryman & Bell, 2011). The advantage of analyzing corporate documentation such as annual reports is in how they describe the results from the previous year at the same time as it is being written in a forecasting manner. The reports are also comparable across the respective firms, in contrast to qualitative interviews, presentation and speeches. As such, it is argued to minimize the change of hindsight bias (Kaplan et al., 2003) by reducing the problem of recreated stories around a past situation or event, to underrate the extent to their reaction to a given situation or event (Kahneman, 2011).

Coding scheme and coding manual

The coding scheme is a critical part of the content analysis process and is carefully set-up by generating initial codes and designing a coding manual (Braun & Clarke, 2006; Bryman & Bell, 2011). The purpose of the coding scheme was to objectively support the data analysis as well as to ensure accurate interpretation of the empirical data. In addition, to avoid any potential rater bias that could appear, the Weber's Protocol was implemented and used through the coding scheme process (Bryman & Bell, 2011; Weber, 1990)(figure 11).

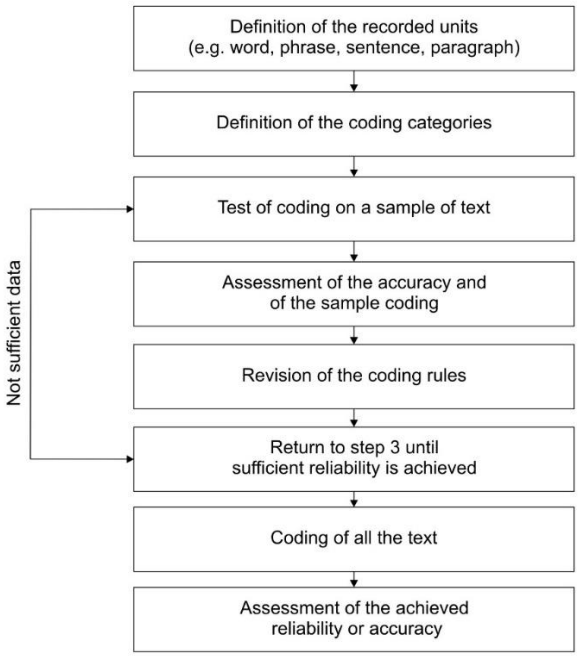

Figure 11 – The Weber Protocol (Adapted from Bryman & Bell, 2011, p. 290)

Based on the research structure, the design of the coding scheme derives from theory. The coding scheme was founded on terminologies and identified the recording units as content (e.g. words, phrases, sentences, and paragraphs) that directly describe or illustrate the underlying meaning of the coding category (Krippendorff, 2013). The purpose of the coding manual was to clearly illustrate the coding and to ensure consistency in category definitions (Weber, 1990) (table 3). The categories were defined in accordance with the research question. A critical factor of the coding manual, was to prevent any interpretation from the researcher when retrieving data (Krippendorff, 2013). For example, the researcher was able to use the "business model data" category for any data that was found difficult to generalize on either of the terminologies.

Prior to coding, a pilot test was run on three randomly selected annual reports from the sample. This, to familiarize the researcher with the data and to ensure that the coding scheme and method of applying a latent analysis structure was appropriate to the study. The test clarified that the industry did not use terminologies related to business model innovation explicitly in their annual reports. As such, it also confirmed the purpose of a qualitative approach and latent structure analysis. The empirical data was entered into a spreadsheet that recorded content which directly or indirectly described the underlying meaning of business model innovation.

Definition	Coding	Author
Strategic typology	• Prospector • Defender • Analyzer • Reactor	(Miles et al., 1978; Snow et al., 2011)
Value configuration	• Value chain • Value shop • Value network	(Fjeldstad & Haancæs, 2001; Fjeldstad & Ketels, 2006; Fjeldstad & Snow, 2017; Stabell & Fjeldstad, 1998)
Business model data (Business model and business model elements)	• Value proposition • Roles of customer • Value creation mechanism • Value appropriation mechanism	(Fjeldstad & Snow, 2017)

Table 3 – The coding manual

The coding manual made used the Gioia methodology to ensure accuracy on how data was both interpreted and presented (Gioia, Corley, & Hamilton, 2013). The manual is structured in a three-level hierarchy. The 1st order concepts represents the direct statements from the annual reports, the 2nd order concepts characterize the underlying factors of which the terminology is built. Lastly, the aggregation is presented through the 3rd order concepts, which consist of the strategic typology (e.g. Miles et al., 1978; Snow et al., 2011), value configuration (e.g. Fjeldstad & Snow, 2017; Stabell & Fjeldstad, 1998) and business model data (i.e. any data related to business model, business model innovation or business model elements).

To avoid excessive repetition throughout chapter 4, it was decided to only place content that could be relevant to several topics once throughout the empirical chapter. Nevertheless, phrases and sentences may be mentioned numerous places in the discussion chapter, as it may be significant for several of the terminologies. Also, in addition to using the manual to present the empirical data, the manual was used to structure and present findings in chapter 5. This, with the intent of consistently interpret data and increase the research credibility (Gioia et al., 2013).

3.2.2 Sample construction

The construction of the sampling database was guided by the study research question and context, which focus on managerial cognition relative to business model innovation in the

Norwegian aquaculture industry. The sampling was configured to include comprehensive and replicable data, from five of the largest aquaculture firms being their corporate annual reports (table 4). According to stakeholder theory, firm's annual reports are closely reviewed or directly written by the firm's chairman or CEO before it is distributed to the top management team (cf. Freeman, Wicks, & Parmar, 2004). This may illustrate how top manager's thoughts and beliefs related to the company's performance and strategic decisions are closely reflected in the semantics of their annual reports (cf. Freeman et al., 2004; Kaplan, 2008; Kaplan et al., 2003). The analysis of managerial cognition by examining content and text is based on the linguistic relativity theory, better known as the weak version of the Sapir-Whorf hypothesis (Sapir, 1944; Whorf, 1956). The theory explains how individual´s thought, belief and actions are determined through the language the individual speaks (Hussein, 2012). This describe how the semantics of a text reflects the author's cognition and values (Boroditsky, 2001). On this basis, corporate annual reports may be considered a suitable representation of analyzing top manager's mental models with respect to firm's attention to business model innovation (T. S. Cho & Hambrick, 2006; Kaplan, 2008; Kaplan et al., 2003).

The sampling population was defined by four main criteria; (*i*) company size defined by production volume of Atlantic salmon; (*ii*) company among the world's largest producers; (*iii*) the primary part of the salmon production from the same geographical location, being Norway; (iv) the company must be listed on the Oslo Stock Exchange (OSE). A short description on each of the firms can be found in appendix 2.

Company	Years in dataset	Δ Volume (tonnes gutted weight)
Marine Harvest	2011-2016	383 234
Lerøy Seafood Group	2011-2016	150 166
SalMar	2011-2016	130 717
Grieg Seafood	2011-2016	63 897
Norway Royal Salmon	2011-2016	24 447

Table 4 - List of aquaculture companies covered in the study

The corporate annual reports are public data and was therefore retrieved directly from the respective firm's corporate websites. Two of these firms published their reports in Norwegian, the rest in English. As it was not possible to obtain the Norwegian report in English, it was decided to use the Norwegian version. For consistency in language, the option of translating the reports were considered. However, it was chosen to keep the reports in its original language. The main reason for this, was based on unreliable results and possible errors. An example is how the

latent meaning of the text could disappear in translation (Kaplan, 2008), and the resource and time constraints of the study.

3.2.3 Challenges of data analysis

To prevent challenges and possible biases associated with measurement and categorization, the thesis has used a coding scheme and -manual. This is believed to have ensured consistency and correct categorization of the terms and hindered personal interpretation by the author upon data retrieval (Bryman & Bell, 2011). To minimize possible fragmentation of the data the data collection included phrases and whole sentences (Bryman & Bell, 2011). However, the issue of losing context of what organizations attempt to convey, is obviously a source of error. And so, despite measures that has been implemented, attention of further possible errors is taken into account (Bryman & Bell, 2011).

3.2.4 Ethical research aspects

The author is aware of its moral responsibility of how the empirical research must reflect honesty and accuracy. Moreover, since the study only included corporate documentation using annual reports and supplementary sources, all of public nature, there is believed to be no confidential information nor ethical considerations that had to be taken into account when analyzing the empirical data. Further, regarding the aspect of confidentiality and risk that is associated with minimizing physical, psychological or social risk (Bryman & Bell, 2011), it was found to be no critical procedures that had to be taken for the ethical aspect of the study.

4 Empirical data

The chapter presents the empirical data that was collected from the respective companies, Marine Harvest, Lerøy Seafood Group, SalMar, Grieg Seafood and Norway Royal Salmon. First, the primary data is presented in sub-chapter 4.1, through the firm's annual reports over a period of six years, ranging from 2011 to 2016. Each of the five companies are presented individually but make use of the same sub-chapters, including value configuration, strategic orientation and business model data. This is intended to provide a functional and clear structure for the reader, and minimal interference of the authors own interpretation. In sub-chapter 4.2, supplementary data is presented through a collection of relevant information i.e. curriculum vitae and shareholder majorities from corporate reports and public sources. The supplementary data is also of public nature and collected from the firm's corporate and public websites.

4.1 Primary source

4.1.1 Marine Harvest

Strategic typology

Year	*1st order concepts: Statements in annual report*
2011	*"Due to the decline in the salmon prices, Marine Harvest has taken measures to protect the cash flow. These include reduced smolt stocking, implementation of a global cost reduction programme and reduction in CAPEX" (p 4)*
	"We are well prepared to handle the currently challenging market, and continue our efforts to improve production, environmental performance and increase value-creation in our new business area Sales and marketing. {...] We expect a significant increase in supply also in 2012 and have taken necessary measures to preserve our financial strength in 2012, by reducing smolt stocking, investments, and cut in operational costs." (p 7)
	"Marine Harvest's research and development (R&D) activities are coordinated by Marine Harvest technical services team which was established in early 2011 after a merger of the Group technical team with Marine Harvest Norway's technical team. All projects coordinated or run by this team and by specialists in the different business units, are followed up in a global project management system" (p 18)
	"One key issue the last three years has been sea lice mitigation in Norway. [...] The use of wrasse and hydrogen peroxide, where Marine Harvest has taken a leading role has proven to be effective. In combination with industry wide improvements in treatment-effectiveness and better coordination, we have seen a combined reduction in medication and sea lice levels. [...] Marine Harvest is participating in several development and research projects together with industry partners and research institutions" (p 7)
	"Marine Harvest works closely with its suppliers to steer their respective R&D activities in a direction that meets Marine Harvest's priorities and needs. Marine Harvest's ambition is to be a driving force in R&D, targeting growth and profitability of the salmon industry [...] In 2011, the R&D activities resulted in new knowledge about viral diseases, the effect of relevated water temperature on seawater growth, and the potential using triploid fish (sterile fish) in farming" (p 19)
2012	*"In Marine Harvest, we see the issues raised above as opportunities, and see them captured in our newly formulated vision - LEADING THE BLUE REVOLUTION. [...] To be the leader, we must be leading in three fields, fish feed, fish farming and in bringing our products to the world. By controlling the full value chain, we can trace our products from feed to fork, and be more proactive in addressing challenges related to sustainable feed, farming and processing" (p 13)*
	"The industry's environmental challenges still require new solutions. Throughout 2012 we strengthened our R&D organisation and we have several on-going projects with promising preliminary results" (p 7)
	"Product innovation is essential for the future success of Marine Harvest [...]. Through more attention to innovation and product development, Marine Harvest will increase the absolute availability of seafood. This is also the foundation for growth in revenue and profitability over time for our value-added units in Europe, Americas and Asia" (p 46)
	"Marine Harvest has a strong focus on R&D, seeing it as crucial to further develop and strengthen the relatively young salmon farming industry. Our effort within this area is recognised by the industry, our competitors, the authorities and other external parties, reflected by the significant involvement of our technical staff in statutory and industry-led research projects and programmes" (p 53)

	"During 2012, Global R&D completed a prioritisation process identifying the key focus areas within R&D. The following areas where identified as key areas where Marine Harvest will put R&D focus both through own direct engagement and through funding and initiating external projects during the coming years; [...]" (p 53)
2013	*"Product innovation; Internal impacts (within Marine Harvest) - contributes to competitiveness and broadening of the market. External impacts (outside Marine Harvest) - may contribute to customer safety, nutrition, choice and satisfaction" (p 21)*
	"Internal impacts (within Marine Harvest) - contributes to improving production efficiency, fish health and technological innovation. External impacts (outside Marine Harvest) - more sustainable solutions will positively impact the environment, communities and customers" (p 20)
	"Research and Development is a key enabler for "Leading the Blue Revolution". Our R&D activities help us to solve operational challenges in our farming and processing operations and find solutions for the long-term sound growth of our company and the industry as a whole" (p 32)
	"During 2013, our Group management team decided to strengthen our resources on technological development and innovation. As a result, our Global R&D and Technical department will be expanded with a new team responsible for seawater and freshwater farming technologies. The team will be responsible for the development of new and future farming technology, including freshwater, seawater, fish transport and harvest, as well as supporting operational units in optimization processes and the planning and execution of expansions and new installations" (p 34-35)
2014	*"Product innovation through value-added seafood products". "We offer a wide range of value added products ranging from steaks, portions and loins to coated, smoked and elaborated products, including ready-to-eat and ready-to-heat products" (p 76)*
	"Being able to offer the full range of salmon products to our customers across Europe gives us a competitive advantage, not only because we are almost alone in being able to do so, but it also gives us economy of scale in production, logistics, product development, etc. An example of our product development efforts is Harbour Infusions" (p 80)
	"A revolution does not occur by itself – we have to make it happen. At Marine Harvest change is about challenging existing ways – over and over again. We believe that change is an opportunity. We encourage our staff to try new things, and sometimes we fail. But the important thing is that we learn from it." (p 19)
2015	*"We have recently applied for 14 development licenses for testing and development of a new closed farming technology called the "Egg". The Egg potentially offers many advantages to conventional salmon farming methods such as cost reductions from reduced sea lice treatment, reduced fish escapes and better feeding control. If approved, trials will be conducted in 2016 and 2017 with salmon in pilot and prototype structures. In 2018 the ambition is to deploy ten units to a seawater site" (p 19)*
	"We view R&D and innovative thinking as key elements in our efforts to remain at the forefront of these developments and fulfil our vision of Leading the Blue Revolution" (p 37)
	"2015 at a glance. Development of a five-year R&D strategy to set the course and define key focus areas and goals" (p 37)
	"Research and Development (R&D) at Marine Harvest is an engine for sustainable growth, and is integral to our vision of Leading the Blue Revolution. We focus on creating sustainable value and competitive advantage by making improvements and breakthroughs in our Feed and Farming, as well as Sales and Marketing Business Areas" (p 38)
	"Our managers are selected to lead from the front" (p 20)
2016	*"At Marine Harvest, we have a bold vision of continuous transformation in fish-feed production, farming, processing, product development, and sales and marketing, all of which are essential for continuous growth in this rapidly developing industry. We call it Leading the Blue Revolution." (p 10)*
	"By exploring and utilizing market opportunities, developing new production methods and establishing facilities in new locations, we aim to achieve "new growth". Further expansion of the salmon industry, both land-based and at sea, depends on new and innovative technological solutions [...]. Testing and documenting potential new farming systems in order to ensure further sustainable growth of our Company and industry is given high priority within the R&D and innovation focus. The part of the production cycle that represents" (p 32)

	"We have therefore applied for development licenses to test the following concepts: the Egg, the Marine Donut and the Ship. A final new concept that we intend to test out, is to widen the area of fish farming, by enabling farming in rougher conditions in more open seas" (p 34)
	"Through substantial investment in research and development, we intend to be at the forefront of technological advances and address current and future challenges, while growing seafood's share of global protein consumption. We call it the Blue Revolution." Alf-Helge Aarskog, CEO (p 23)
	"Today, our own brands represent a small part of our business, but we have high ambitions to grow these further and will therefore increase our innovation and brand building efforts" (p 90)

Table 5 - Empirical data - Strategic typology - Marine Harvest

Value configuration

Year	***1st order concepts: Statement in annual report***
2012	*"Developing "the integrated protein company". In 2012, the Board decided to start transforming Marine Harvest from being a production driven farming company to become a fully integrated seafood protein producer, capturing the total value in the value chain. To achieve this position the Board sanctioned investments in a feed plant in Norway and the acquisition of Morpol, the world's leading processor of salmon" (p 4)*
	"Expanding upstream – greenfield in fish feed Marine Harvest decided in 2012 to enter into feed production. Feed accounts for approximately 50 % of our cost base. Feed is essential with regards to the performance of our fish and the quality of our end product. The positioning in feed is essential in transforming our company from a production oriented farming company to an integrated protein company. Feed will be operated as a separate Business Area in Marine Harvest but interlinked with our other Business Areas, farming and sales and marketing" (p 7)
	"Value Chain Development - Upstream and downstream integration. During 2012 it was decided to start transforming Marine Harvest from being a production driven, farming company, to become a fully integrated seafood protein producer. The transformation will enable us to capture the total value in our value chain and help us address sustainability challenges in our industry. To achieve this position, the Board sanctioned investments in a feed plant in Norway and the acquisition of Morpol – the world's leading processor of salmon. The feed plant will strengthen the Group's production side, secure access to first class feed and improve traceability. The Morpol acquisition will, subject to approval by the relevant competition authorities, provide the Group access to state of the art processing technology and facilities, and provide market access to geographies where Marine Harvest currently has limited presence" (p 13) (b) "Upstream integration - Fish Feed: Feed is a central cost component in production of Atlantic salmon. Feed is also important with regards to sustainability, and for the quality of the end product. Feed production is a new field of operation for Marine Harvest, and through establishing our first factory, we will increase our knowledge with regards to feed ingredients, and more importantly how to adapt the feed to our fish" (p 13)
	"Upstream integration - Fish Feed: Feed is a central cost component in production of Atlantic salmon. Feed is also important with regards to sustainability, and for the quality of the end product. Feed production is a new field of operation for Marine Harvest, and through establishing our first factory, we will increase our knowledge with regards to feed ingredients, and more importantly how to adapt the feed to our fish" (p 13)
	"Marine Harvest has activities in many countries and we believe that sharing best practice is an important tool for continuous improvement. The Food Safety & Quality network in Marine Harvest includes members from all our processing facilities and salmon producing units. This network will continue to share knowledge, identify common KPI's, and ensure clear responsibilities for implementation of agreed actions in each unit" (p 45)
	"In Marine Harvest, we see the issues raised above as opportunities, and see them captured in our newly formulated vision - LEADING THE BLUE REVOLUTION. [...] To be the leader, we must be leading in three fields, fish feed, fish farming and in bringing our products to the world. By controlling the full value chain, we can trace our products from feed to fork, and be more proactive in addressing challenges related to sustainable feed, farming and processing" (p 13)

2013	*"Fish feed production is a new field of operation for us, and, by establishing our first factory, we seek to increase our knowledge of fish feed ingredients and better understand how to adapt the feed to our fish. We believe the feed plant will strengthen the production side of our business model, secure access to high quality feed and improve our ability to control, trace and understand the key input to our product" (p 13)*
	"Through active involvement in national and industry research strategy groups, we address important research areas for the industry. We conduct trials at private and public research facilities and our technical staff is also invited to participate in or lead numerous public and private sector research projects – a clear recognition of our R&D competence and reputation by the industry, the authorities and scientific institutions" (p 32)
	"The Group's overall ambition is to grow organically as well as through acquisitions. At present, growth is focused on the salmon value chain, from feed to fork, but other species will be considered going forward. In line with this strategy, in October 2012, the Board resolved to develop a feed division to secure access to high-quality feed. The Group's first feed production unit is located in Norway. Construction is developing according to plan and production is expected to commence in 2014. Through the Morpol acquisition, the Group's production of value-added seafood will increase significantly. This is an important element in controlling the entire value chain" (p 103)
	"Through its robust business model, Marine Harvest is well positioned for acquisitive and organic growth going forward. Several specific opportunities for growth are closely monitored and some actions have already been taken, including the entry into forward contracts to purchase a 25.8% stake in Grieg Seafood. This acquisition was cleared by the Canadian competition authorities on March 3, 2014 and is currently awaiting approval by the Ukrainian Anti Monopoly Committee" (p 100)
2014	*"The Group's overall ambition is to grow organically as well as through acquisitions. At present, growth is focused on the salmon value chain, from feed to fork, but other species will be considered going forward. In line with this strategy, in October 2012, the Board resolved to develop a feed division to secure access to high-quality feed. The Group's first feed production unit is located in Norway. Construction is developing according to plan and production is expected to commence in 2014. Through the Morpol acquisition, the Group's production of value-added seafood will increase significantly. This is an important element in controlling the entire value chain" (p 103)*
	"At Marine Harvest, we believe the smart way of supplying a growing world population with healthy, nutritious protein products, is by cultivating the ocean. To lead the "Blue Revolution" our ambition is to be a world-leading, integrated producer of seafood proteins. In order to achieve this, we aim to capitalize on our integrated value chain and be the leader in three key areas – salmon feed, salmon farming and in meeting the needs of the market." (p 14)
	"Learning more about exposed farming". "From 2015, we will be part of a research center for exposed aquaculture operations, uniting strong scientific institutions with ambitious industry players. The center will engage in both basic and applied research. Areas of investigation will include systems for remote operations, monitoring and operational decision support, structures and vessels for exposed operations, safety and risk management. In addition, fish behavior and welfare will have special emphasis" (p 32)
2015	*"We aim to capitalize on our integrated value chain in order to achieve our ambition to becoming a world leading, integrated producer of seafood protein" (p 7)*
	"Further to our integrated marine protein provider strategy, we see an opportunity to streamline production and cut costs related to the operations of work boats, well boats and feed boats, the majority of which are currently leased from third parties. To this end, the Board has decided to evaluate the possibility of establishing a new Business Area, Marine Harvest Shipping. The new Business Area is expected to be built up gradually through organic growth, starting with the recruitment of a Chief Operating Officer in 2016" (p 21)
	"We aim to capitalize on our integrated value chain in order to achieve our ambition to becoming a world leading, integrated producer of seafood protein" (p 7)
	"Strategic direction. We continue to develop our three operational pillars: fish feed; salmon farming; and value-added production and sales, where the latter has become an area of increasing focus for us. In recent years, logistics at sea has gradually become more integrated into our farming operations, making us more dependent upon the availability of suitable vessels for our success. In 2016, we will therefore evaluate the potential benefits of establishing our own fleet of feed supply and other vessels that operate in close proximity to our fish" (p 8)

	"In January 2015, a conditional agreement to merge Marine Harvest Chile with AquaChile was entered into. Subject to approval, the merged company will be the second largest salmon company in the world. Marine Harvest will own 42.8% of the new entity, with an option to acquire up to a minimum of 55% after June 15, 2016" (p 6)
	"Projects to support our operational goals are undertaken in collaboration with external partners, through partnerships with leading institutions across the globe, and at our own dedicated R&D facilities throughout our Group" (p 39)
	"In 2016 Marine Harvest will continue to invest across the value chain to support organic growth" (p 122)
2016	*"We believe there are benefits to vertical integration, due to the greater capacity it gives us to control the production process. We refer to activities which occur after farming (i.e. secondary processing) as downstream operations and activities occurring prior to farming (i.e. feed production) as upstream operations. Our integrated production helps us stabilize costs, control the quality of our products and improve efficiency. Over time, vertical integration is expected to result in more stable earnings and unlock future growth. We expect to be less exposed to the cyclical nature of salmon prices, and be better able to control the quality of our products" (p 25)*
	"Further to our integrated marine protein provider strategy, we have entered into a 50/50 aquaculture shipping joint venture with Deep Sea Supply PLC to build, own and operate aquaculture vessels. We believe there is significant room for efficiency improvements across the value chain in aquaculture shipping, ranging from a reduction in new building costs to more cost-efficient operations. In 2016 the JV contracted its first two newbuilds, one well boat and one harvest vessel" (p 26)
	"Projects to support our operational goals are undertaken in collaboration with external partners, through partnerships with leading institutions across the globe, and at our own dedicated R&D facilities throughout the Group" (p 31)
	"Our R&D projects grouped under value chain optimization encompass projects seeking to boost efficiency and reduce costs throughout the value chain, from farming and harvesting, to primary and secondary processing" (p 34)

Table 6 - Empirical data - Value configuration - Marine Harvest

Business model data

Year	***1st order concepts: Statement in annual report***
2011	*"The company was reorganized into two new business areas with effect from 1 april: Farming and Sales and marketing" (p 4)*
	"In 2011, we changed our organisation from a geographical to a functional model. The purpose is to strengthen our ability to add value to farmed salmon and sourced seafood. our new business area Sales and marketing is now measured on its ability to increase margins, and should gradually strengthen the Group's market orientation and move us closer to the end market" (p 7)
	"From 1 April 2011, the Group changed the organisation from a geographical to a functional structure with two business areas; Farming and Sales and Marketing. The purpose of the reorganisation was to strengthen the focus on the Group's core activities, to devote more resources to marketing activities, to improve coordination and development of best practices and value creation" (p 9)
	"Our focus is on geographical market expansion, utilizing the demand-momentum created by low prices, capital efficiency and cost reduction measures. Marine Harvest is well positioned and will take part in consolidation in the industry going forward. [...] The industry's environmental challenges calls for better regulations, increased investments in R&D [...]" (p 7)
	"Marine Harvest continues to work actively with regulators, industry partners and the scientific community to promote environmental responsibility in the industry. [...] the Group was instrumental in facilitating a clear and binding statement from the Norwegian industry association on improvements in sea lice mitigation and escape prevention." (p 18)
2012	*"Operationally we continue to improve and through our effort to strengthen our value added business with the acquisition of Morpol and our green feld investment into feed, we will be able to deliver more stable earnings over time. [...] In 2012 Marine Harvest acquired 48.5 % of the world's leading value added processor of salmon, Morpol. This acquisition is in line with our strategy of developing the Group*

	into an integrated protein company based on healthy protein from the ocean. The acquisition will,[...] significantly strengthen our downstream operations. Marine Harvest intends to continue to develop downstream to be able to supply our customers with user friendly and healthy products. " (p 7)
	"In March 2013 we launched a new vision – "leading the blue revolution". By this we mean that we want to be a leader in cultivating and growing food in the ocean. We want to make a difference in the world through what we do and who we are. In accordance with the vision we will re-vitalise our corporate values. These will be launched later in the year, building on our history of passion and pride, innovative ideas and sustainable development." (p 7)
	"Priorities moving forward. Marine Harvest's focus is to reduce our carbon footprint through optimizing the energy we use throughout our value chain" (p 34)
2013	*"Our strategic ambition is to be number one in fish feed, salmon farming and value-added processing" (p 7)*
	"Our ambition is to produce and sell seafood for a better life for our customers, shareholders, our colleagues and all other stakeholders and for the world. These goals are embedded in our vision "Leading the Blue Revolution" (p 12)
	"Financial results are created through interaction between people, the natural environment and technology. Our goal is to find an optimal combination of these elements to create long-term results, understanding that our growth must be sustainable from all perspectives: environmental, social and financial" (p 18)
	"On August 15, 2013, the CEOs of 15 global salmon producing companies launched a major industry-led sustainability initiative – The Global Salmon Initiative (GSI). The GSI commits the participating companies to work towards greater industry cooperation and transparency, in order to achieve significant and continuous progress in industry sustainability" (p 28)
	"Further, we aim to contribute to growth and profitability through branding. We plan to invest and grow the seafood sector in cooperation with retailers, and we want to help consumers discover the rich opportunities of fish in general and salmon in particular. Strong brands will lead to an increase in the overall consumption of seafood, which may in turn increase the consumer's willingness to pay. We will be proactive and continue to challenge the status quo. Our ambition is to revitalize the industry" (p 74)
	"We believe in simplicity, having a lean organization with short reporting lines and low complexity. Our goal is to build a strong company with a culture based on common values and an open and positive working environment" (p 85)
2014	*"Focus on downstream consolidation and efficiency. In 2014 we introduced the Mowi brand in Japan to explore a business opportunity identified in consumer test groups. [...] In Taiwain we continue to develop Supreme Salmon as a brand, and have two concept stores to increase awareness and give inspiration to the customers. In 2014 we also developed the Rebel Fish brand for the American market" (p 9)*
	"In June 2014, we announced the launch of Marine Harvest Consumer Products – a Business Unit comprising the combined operations of Morpol and Marine Harvest VAP Europe" (p 103)
	"CHANGE. A revolution does not occur by itself – we have to make it happen. At Marine Harvest change is about challenging existing ways – over and over again. We believe that change is an opportunity. We encourage our staff to try new things, and sometimes we fail. But the important thing is that we learn from it." (p 16)
	Our leadership principles. The company has formalized their leadership principles in 2014 in respect to that "managers are selected to lead from the front, and we want all of them to know what is expected of them" (p 16)
2015	*"Organizational development. The organization's efficiency and its ability to learn, as well as communicate and implement required changes, are crucial to our future success. [...] In 2015 we rolled out our leadership principles: Make it happen - Live the values - Inspire people - Think and act. These are traits we are looking for in our leaders". I personally believe that continuous efforts to develop our leaders, as well as the selection of the best leaders for the future, will give us a competitive advantage going forward (p 9)*
	"Our managers are selected to lead from the front" (p 20)
	"2015: Board decision to build a feedplant in Scotland and explore the possibility of a new Business Area – Marine Harvest Shipping" (p 11)

	"Production in closed sea-going units - the "Egg" In 2015 the Norwegian government launched a new "development license" scheme, with the aim of stimulating technology development to overcome key challenges related to environment and sustainability in the Norwegian salmon farming industry. The new scheme offers an incentive to investment and development by opening up the possibility of converting the development licenses to commercial licenses at a cost of NOK 10 million per license if the project goals are met. Together with the technology company Hauge Aqua, we applied for 14 development licenses to test a concept for closed-containment farming named the "Egg". The "Egg" will be 44 meters high and 33 meters wide" (p 42)
	"Change is the new "normal" - we are ready for change and are working continuously to improve our operations" (p 108)
	"We are in the process of transforming ourselves from a production-driven fish farming company into an integrated marine protein provider, expanding in fish feed and broadening our secondary processing operations. In line with our strategy, and based on the positive experience from our feed plant in Norway [...] the Board of Directors in December 2015 approved the development of a new feed plant in Scotland. [...] The broadening of the secondary processing operation started with the acquisition of Morpol in 2013. [...] Further to our integrated marine protein provider strategy, Marine Harvest sees an opportunity to streamline production and cut cost related to the operational vessels [...] the Board of Directors have decided to evaluate the possibility of a new Business Area, Marine Harvest Shipping" (p 112)
	"Marine Harvest is evaluating expanding business activity into service vessels. The company currently charters 44 vessels ranging from work boats and well boats to feed boats. The biological situation in Norway and our other farming regions make well boats an integrated part of the value chain" (p 123)
2016	*"At Marine Harvest, we have a bold vision of continuous transformation in fish-feed production, farming, processing, product development, and sales and marketing, all of which are essential for continuous growth in this rapidly developing industry. We call it Leading the Blue Revolution." (p 10)*
	"Inspire people: we recruit the very best and build talent for the future. We strive to create winning teams and challenge people to succeed. — Make it happen: we challenge existing thinking and promote change and innovation. We encourage people to propose solutions and learn from mistakes" (p 23)
	"They always say time changes things, but you actually have to change them yourself" Andy Warhol, American artist (1928-1987) (p 91)
	"To further support our farming activities, we established DESS Aquaculture Shipping in 2016. DESS Aquaculture Shipping is a joint venture with Deep Sea Supply PLC established for the purpose of building, owning and operating aquaculture vessels. In August 2016, the company contracted its first two new-builds, one well boat and one harvest vessel" (p 130)
	"Leading the Blue Revolution means continuous transformation. This includes the transformation of our farming practices" (p 10)
	"In terms of sustainability, our ambition is to have all our farming operations ASC certified by 2020. By the close of 2016, we had 25% accredited. ASC certification means that we must adhere to strict operational requirements which we believe contribute to transformational change" (p 12)
	"The organization's ambition is to lead a global transformation towards sustainable seafood production and a healthy ocean" (p 58)

Table 7 - Empirical data - Business model data - Marine Harvest

4.1.2 Lerøy Seafood Group

Strategic typology

Year	*1st order concepts: Statement in annual report*
2012	*"Lerøy har som ambisjon å være en ledende innovatør og kategoriutvikler på sjømat i de viktigste sjømatmarkedene i verden. Det vi lærer i noen markeder skal overføres til andre markeder. Vi skal være en kompetansebedrift som hjelper våre kunder med å utvikle sjømatkategorien i eget marked." (p 9)*
	"Helt sentralt i Lerøy Seafood Groups sin vekststrategi er å tilby nye produkter til både eksisterende og nye markeder." (p 13)
	"Konsernet er svært markedsrettet i sitt arbeid. Ved aktivt å utvikle nye markeder og nye produkter fra fiskeri og havbruk tuftet på bærekraftige prinsipper, vil konsernet utvikle lønnsomme, effektive og bindende samarbeid på tilførsels- og markedsføringssiden både nasjonalt og internasjonalt." (p 11)
	"Veksten til Lerøy Seafood Group setter stadig større krav til forretningssystemer, risikostyring og kapital. Konsernet har et kontinuerlig fokus på å utvikle forretningssystemer som kan vokse med selskapet og som skaper konkurransefortrinn i markedet." (p 12)
	"Veksten til Lerøy Seafood Group setter stadig større krav til forretningssystemer, risikostyring og kapital. Konsernet har et kontinuerlig fokus på å utvikle forretningssystemer som kan vokse med selskapet og som skaper konkurransefortrinn i markedet." (p 11)
2014	*"Lerøy Seafood Groups historiske vekst har vært tuftet på god drift, oppkjøp, videreutvikling av oppkjøpte selskaper og alliansebygging. Styret og administrasjonen jobber kontinuerlig med strategisk fremtidsrettede modeller for konsernets aktiviteter. Disse vil også i fremtiden innebære oppkjøp og fusjoner både oppstrøms og nedstrøms" (p 11)*
	"Helt sentralt i Lerøy Seafood Groups vekststrategi er å tilby nye produkter til nye markeder. For å kunne gjøre dette må man kjenne, og være nær, kunden og markedet" (p 17)
2015	*"Hovedfokus har alltid vært på utvikling av markeder for sjømat, og svært ofte har konsernet vært først ute i nye markeder, eller først ute med å kommersialisere nye fiskearter. Det er et viktig mål for konsernet å være en innovatør innen sjømat, gjerne i samarbeid med sluttkunden. Dette gjelder ikke bare innenfor produktutvikling, men også på områder som utvikling av effektiv logistikk og distribusjon. Pionerånden er fortsatt høyst levende i konsernet. Sjømatkonsernet Lerøy Seafood Group er ved inngangen til 2016 godt posisjonert for videre vekst og utvikling" (p 5)*
	"I fremtiden vil fokus på innovasjon, effektivisering,teknologiutvikling, automatisering, produksjon og salg av høykvalitetsprodukter være avgjørende for vår konkurransekraft og fremtidige vekst." (p 11)
2016	*"Lerøy Seafood Group søkte i 2016 om utviklingskonsesjoner til konseptet «Pipefarm», et lukket, flytende lengdestrømsanlegg. Konsernet mener at konseptet kan utvikles til en optimal løsning for lukket produksjon i sjø og på sikt bidra til å skape en mer arealeffektiv havbruksnæring. Søknaden gjelder totalt ni FoU-tillatelser og en samlet kapasitet på 7 020 tonn" (p 7)*
	"Vi har sterk tro på at vi skal klare å videreutvikle våre VAP-selskaper i tiden fremover. Det skal vi gjøre ved å fokusere på produkt- og markedsutvikling samt på produksjonseffektiviserende tiltak i alle enheter. Vi ser store muligheter i økt teknologiutvikling og automatisering i tiden som kommer. Dette vil bidra til større konkurransekraft for våre markedsnære produksjonsenheter" (p 13)
	"Lerøy gjennomfører løpende en rekke større og mindre FoU-prosjekter med fokus på bedre driftsrutiner, bedre fiskevelferd samt bedre overlevelse og produksjonsoptimalisering. Dette er viktige prosjekter som griper direkte inn i vår daglige produksjon, og som raskt bidrar til resultater og forbedringer. Teknologiutvikling og metodeutvikling basert på et samspill mellom teknologi og biologi er viktig for å optimalisere driften" (p 53)

Table 8 - Empirical data - Strategic typology - Lerøy Seafood Group

Value configuration

Year	*1st order concepts: Statement in annual report*
2011	*"I 2011 og i begynnelsen av 2012 gjennomførte vi to spennende strategiske investeringer i Finland og Holland. [...] Kjøpet av aksjemajoriteten i Rode og Jokisen er et viktig ledd i videreutviklingen av Lerøy Seafood Group sin markedsstrategi, som innebærer satsing på selvstendige lokale enheter, sentralt plassert i viktige sjømatmarkeder." (p 7)*
	"Det er viktig at samspillet mellom foretak i verdikjeden som danner nettverket tar utgangspunkt i sluttbruker sine behov og ønsker. Samarbeidspartnere og Lerøy Seafood Group utgjør et forretningsmessig nettverk. Nettverket må sikre gjensidig kompetanseutveksling aktørene imellom. Nettverks foretak må uavhengig av eierskap få gode muligheter til å fokusere på egen kjernevirksomhet samt kapitalisere på stordriftsfordeler og redusert risiko." (p 23)
	"Selskapets produktbredde gir salgsfordeler i de fleste markedsområder. Selskapets strategi er å tilfredsstille markedenes økende krav til matvaresikkerhet, kvalitet, produktbredde, kostnadseffektivitet og kontinuerlige leveranser. Dette gjennomføres ved samkjøring av de ulike deler av verdikjeden, produksjonsenheter, konsernets salgsnettverk og etablerte strategiske allianser med oppdrettsbedrifter, fartøyer og produksjonsbedrifter for det vesentlige langs norskekysten. Det arbeides kontinuerlig med videreutvikling av konsernets forretningssystem." (p 23)
	"Konsernet har flere kriterier ved utvelgelse av eventuelle alliansepartnere og investeringsobjekter. Blant annet vurderer konsernet alltid hvilken forutsetning alliansepartneren og investeringsobjektet har for god drift. Dette vurderes med hensyn til den kompetansen som er hos ledelsen, men like viktig er også hvilken kompetanse som finnes i organisasjonen for øvrig. Det er vesentlig at. [...] må eventuelle alliansepartnere eller investeringsobjekter ha en bevisst holdning til hva som ligger i kontinuerlig, kvalitetssikret markedsrettet produksjon." (p 24)
	"Produksjonsklyngene i de ulike regionene skal videreutvikles gjennom uttak av synergier på flere områder i tillegg til at miljøene skal trekke veksler på hverandres kompetanse gjennom en utstrakt kompetanseutveksling. Konsernets desentraliserte driftsmodell i produksjonsvirksomheten muliggjør slik utvikling. Konsernets regionale satsing gir etter vår oppfatning grunnlag for en interessant industriell utvikling også ved å skape allianser og samarbeid utover direkte eierskap." (p 25)
	"Allianser: Verdier skapes av foretak i verdikjeder som danner nettverk. Foretak i nettverk har gode muligheter til å fokusere på egen kjernevirksomhet samt kapitalisere på stordriftsfordeler og redusert risiko. Vi må stadig forbedre konsernets kjernevirksomhet, herunder videreutvikling av langsiktige og forpliktende allianser på leverandør- og kundesiden. Dette vil over tid sikre markedstilpassede, kostnadseffektive løsninger og derigjennom lønnsomhet." (p 30)
2012	*"Lerøy Seafood Groups historiske vekst har vært tuftet på god drift, oppkjøp, videreutvikling av oppkjøpte selskap og alliansebygging. Styret og administrasjonen jobber kontinuerlig for strategisk fremtidsrettede modeller for konsernets aktiviteter. Disse vil også i fremtiden innebære oppkjøp og fusjoner både oppstrøms og nedstrøms." (p 11)*
	"I første kvartal 2012 inngikk Lerøy Seafood Group ASA (Lerøy) og SalMar ASA (SalMar) en strategisk viktig avtale. Avtalen innebærer at Lerøy skal slakte og videreforedle et betydelig volum av sin fisk ved Innovamar på Frøya samtidig som SalMar skal slakte sitt totale produksjonsvolum i nord ved Lerøy sitt anlegg på Skjervøy. Lerøy er svært tilfreds med at partene i alliansen gjennom denne avtalen kan realisere store effektivitetsgevinster og kapitalrasjonalisering. Avtalen er en utvidelse av et mangeårig samarbeid som Lerøy-organisasjonen er stolt av." (p 52)
2013	*"Styret ser på bakgrunn av konsernets mangeårige satsing på alliansebygging, utvikling av kvalitetsprodukter, markedsutvikling, kvalitetssikring og merkevarebygging, fortsatt gode muligheter for økt verdiskapning for selskapets aksjonærer og konsernets viktige samarbeidspartnere. Konsernet vil i tiden som kommer videreføre sitt arbeid for varig bærekraftig verdiskapning gjennom fokus på strategisk forretningsutvikling og effektivisering av drift" (p 58)*
	"I juni 2013 inngikk LSG og Brødrene Schlie Fiskeeksport i Danmark en avtale om å etablere selskapet Lerøy Schlie AS. Det nye selskapet har sitt hovedkontor i Hirtshals i Danmark og skal forestå produksjon, markedsføring og distribusjon av ferskpakket sjømat i Danmark og Tyskland." (p 58)

2014	*"I vår streben etter optimal miljømessig og økonomisk bærekraftig produksjon har vi gjort betydelige investeringer i produksjon av rensefisken rognkjeks. Vi kjøpte i 2014 34 % av Norsk Oppdrettsservice AS, som er ledende på produksjon av denne arten, og som har produksjonsanlegg både i Midt-Norge og Sør-Norge. I tillegg har vi bygget ut to egne anlegg for produksjon av Rognkjeks, samt at vi tidlig i 2015 kjøpt en produsent i Nord-Norge. Lerøy vil i fremtiden være selvforsynt med rognkjeks i alle regioner." (p 9)*
2016	*"Lerøy Seafood Groups historiske vekst har vært tuftet på god drift, oppkjøp, videreutvikling av oppkjøpte selskaper og alliansebygging. Styret og administrasjonen jobber kontinuerlig med strategisk fremtidsrettede modeller for konsernets aktiviteter. Disse vil også i fremtiden innebære oppkjøp og fusjoner både oppstrøms og nedstrøms" (p 15)*
	"På grunnlag av en kritisk evaluering av verdikjeden og våre arbeidsprosesser har vi konkludert med at vi i dag har størst innflytelse gjennom å arbeide med ulike områder knyttet opp mot fiskeri- og havbruksvirksomheten vårt" (p 44)

Table 9 - Empirical data - Value configuration - Lerøy Seafood Group

Business model data

Year	*1st order concepts: Statement in annual report*
2011	*"Konsernets kjernevirksomhet krever ulike former for kompetanse og stor grad av endringsvilje. [...] For å møte den fremtidige utviklingen i verdens matvaremarkeder vil konsernet fortsatt utvikle organisasjonen gjennom prosjektarbeid knyttet opp mot konsernets strategiske målsetninger." (p 24)*
	«Strategisk forretningsutvikling: Konsernet har over flere år gjort betydelige oppkjøp. Strategisk forretningsutvikling er avgjørende også i den videre utvikling av konsernet. Ovennevnte områder skal sikre best mulig utnyttelse av konsernets ressurser og optimal verdiskapning for selskapets aksjonærer, ansatte og dets samarbeidspartnere.» (p 35)
	"Styret understreker behovet for strategisk fremtidsrettede modeller for konsernets aktiviteter, som kan innebære oppkjøp og fusjoner både oppstrøms og nedstrøms." (p 35)
2012	*"Konsernets kjernevirksomhet krever også ulike former for kompetanse og stor grad av endringsvilje." (p 12)*
	"For å møte den fremtidige utviklingen i verdens matvaremarkeder vil konsernet fortsatt utvikle organisasjonen og gjennom prosjektarbeid knytte opp mot konsernets strategiske målsetninger." (p 12)
2013	*"Jeg har store forventninger til at også 2014 kommer til å bli et strålende år! Vi har forretningsmodellen til å ta ytterligere steg." (p 9)*
2014	*"En viktig del av Lerøy Seafood Groups strategi er å være en helintegrert leverandør av selskapets hovedprodukter, atlantisk laks og ørret, og virksomheten utøves i dag gjennom en rekke datterselskaper i Norge og internasjonalt" (p 12)*
2015	*"Lerøy Seafood Groups historiske vekst har vært tuftet på god drift, oppkjøp, videreutvikling av oppkjøpte selskaper og alliansebygging. Styret og administrasjonen jobber kontinuerlig med strategisk fremtidsrettede modeller for konsernets aktiviteter. Disse vil også i fremtiden innebære oppkjøp og fusjoner både oppstrøms og nedstrøms" (p 13)*
	"Konsernets kjernevirksomhet krever ulike former for kompetanse og stor grad av endringsvilje. [...]. Veksten til Lerøy Seafood Group stiller stadig større krav til forretningssystemer, risikostyring og kapital. Konsernet har et kontinuerlig fokus på å utvikle forretningssystemer som kan vokse med selskapet, og som skaper konkurransefortrinn i markedet" (p 13)
2016	*"2016 vil bli husket som et av de viktigste årene i selskapets lange historie. Lerøy Seafood Group ASA kjøpte 100 % av aksjene i trålrederiet Havfisk ASA og 100 % av aksjene i Norway Seafoods Group AS. Dette er to av Europas største selskaper innen henholdsvis fangst og foredling av hvitfisk. Konsernet har gjennom denne investeringen fått muligheten til å ta fatt på en ny og spennende utvikling hvor fangst og videreforedling av hvitfisk skal integreres i konsernets veletablerte verdikjede. Lerøy Seafood Group er nå et helintegrert selskap med kontroll på hele verdikjeden på alt av sjømatprodukter fra hav til konsument. Sjømatkonsernet Lerøy Seafood Group er ved inngangen til 2017 i en unik posisjon og godt posisjonert for videre vekst og utvikling" (p 5)*
	"Med 100 % eierandel i Havfisk ASA og Norway Seafoods Group AS har Lerøy Seafood Group startet en ny og spennende reise der hvitfisk skal integreres i konsernets veletablerte verdikjede. Dette gjør Lerøy Seafood Group til et helintegrert selskap med kontroll på hele verdikjeden for alt av sjømat fra hav til konsument" (p 6)
	"Gjennom Lerøy Seafood Groups veletablerte integrerte verdikjede for rødfisk har konsernet et vesentlig potensial for økt verdiskaping gjennom ytterligere utvikling av markedet for hvitfisk. Dette omfatter å styrke konsernets posisjon som leverandør av fersk/«refreshed» sjømat med et fullt assortiment av sjømatprodukter. Per i dag er styret styrket i sin tro på at oppkjøpet vil generere." (p 77)
	"I 2016 fikk Lerøy Seafood Group tilgang på den nye brønnbåten «Seihav» gjennom selskapet Seistar Holding AS, hvor LSG har en eierandel på 50 %. Seihav er utstyrt med topp moderne teknologi og utstyr, og er bygget for å frakte levende fisk og smolt til og fra merder og slakteri. I tillegg kan Seihav håndtere aktiviteter knyttet til sortering av fisk samt ulike metoder knyttet til behandling mot lus og AGD. Båten, som kan laste opp til 550 tonn levende fisk, kommer i all hovedsak til å operere Hordaland og deler av Sogn og Fjordane" (p 6)
	"Konsernet skal gjennom sin aktivitet skape varige verdier. Det stilles derfor strenge krav til risikostyring og evne til langsiktighet i utviklingen av bærekraftigenstrategiske forretningsprosesser." (p 77)

Table 10 - Empirical data - Business model data - Lerøy Seafood Group

4.1.3 SalMar

Strategic typology

Year	*1st order concepts: Statement in annual report*
2011	*"In 2011 the values and the SalMar School have been revitalised, in keeping with other changes in the group and the industry as a whole. SalMar's vision is now quite simply to be the lowest-cost supplier of farmed salmon, which implies that the company will always be the most cost effective producer of salmon. This is something SalMar has often been, but not always. For this reason the SalMar School and the cultural tenets have become more important than ever in our efforts to retain our position as the world's most cost-effective salmon producer" (p 11)*
	"SalMar focuses strongly on the development of scientific, technical and process competence in all its business areas. The SalMar School collects, develops and disseminates knowledge and "best practices" throughout the organisation. At the same time, management at each business area is responsible for identifying and implementing projects and initiatives which can help to expand the Group's overall competence as well as strengthen the technical and practical solutions used at the new InnovaMar facility, among others" (p 40)
2012	*"We at SalMar have a clear and extremely ambitious goal: to be the world's most cost-effective producer of farmed salmon" (p 8)*
	"We already have the world's largest and most innovative salmon processing plant, and we work closely with key R&D environments to participate in the ongoing development of new and forward-looking technologies" (p 9)
	"In our view, therefore, there is considerable growth potential in both established and new markets, as a result partly of changing consumer trends and partly of a rapidly growing, more affluent middle class. As a producer of first-class Atlantic salmon, SalMar fits perfectly into this scenario. We are therefore continuing to work in accordance with our tenet" (p 9)
2013	*"The new design combines the best of existing technology and solutions from the Norwegian fish farming industry and the offshore oil and gas sector [...]. The project is based on proven technology composed for optimal fish farming. [...] The facility is fully automated, avoiding heavier manual operations. During normal operations, a crew of 2-4 people will monitor and manage the facility. However, it can also be remotely operated" (p 14)*
	"Although SalMar continues to peruse its stated aim of cost leadership, it is moving from a focus on outcomes to a focus on performance. We aim for excellence at all levels and at all aspects of our operation" (p 20)
2014	*"The strategy builds on SalMar's already strong performance culture, which will be further reinforced. Initiatives will focus primarily on optimising the company's core business operations. SalMar has experienced substantial growth in recent years, and strategic priority has been given to measures that will enable us to resolve the challenges arising out of rapid expansion" (p 43)*
2015	*"For our operative units, we have two simple but clear objectives; 1) Maximum operational efficiency for biological production at a minimum cost; 2) The best possible sales price for our salmon, and optimal resource utilisation" (p 9)*
	"The offshore fish farm underlies SalMar's ambition and determination to be a technology leader in the field of sustainable seafood production" (p 8)
2016	*"In 2017 our firm target is to reverse the rise in production cost" (p 9)*
	"We are also very pleased to be working in close cooperation with leading centres for maritime technology, in particular Kongsberggruppen, which are supporting us in the implementation and application of new, ground-breaking technology for open-ocean fish farming. Passion for Salmon «Passion for Salmon» is our vision" (p 11)
	"In the long haul, it will be those companies which through dedication and sound decisions, best use the good times to position themselves for the future, that will emerge as winners. This is fundamental in SalMar's thinking, management and positioning. The solutions to the challenges confronting the industrys will increasingly prove difficult to find in the traditional toolbox that the industry has used until

	now. The aquaculture sector has arrived at a point where the application of innovation and out-of-the-box thinking is a condition for further development and growth. Crucial to the success of such innovation is the ability to connect the knowledge and experience we have today with new technologies and production patterns in a way that they together, can shape tomorrow's fish farming industry" (p 10)

Table 11 - Empirical data - Strategic typology - SalMar

Value configuration

Year	***1st order concepts: Statement in annual report***
2011	*"SalMar believes the Faeroes offer good conditions for farming of atlantic salmon, and it sees opportunities for partnership between salmar and Bakkafrost. In 2011 a collaboration was established with respect to the use of well-boats and the purchase of feed from Bakkafrost's feed factory, Havsbrun" (p 37)*
	"SalMar invests considerable resources to be at the forefront in the development of "best practices" and new environment-friendly solutions in all parts of the value chain" (p 41)
2012	*"Harvesting and processing agreement with Lerøy. In February 2012 SalMar entered into an industrial collaboration with the listed company Lerøy Seafood Group ASA (Lerøy) (p 42)*
	"Collaboration with other companies in the areas of harvesting and secondary processing gave good results through the year and increased capacity utilisation at the InnovaMar plant" (p 8)
	"At SalMar we control the entire value chain, from selectively bred broodfish, via fry, smolt and full-grown fish to harvesting, secondary processing and sales. We know that every single process is critical to a good outcome, and we know that we will always have considerable potential for improvement in all areas. For this reason, we are also working strenuously every" (p 8)
2013	*"But I believe there is light to be seen on the horison. The acquaculture industry has a long history of close collaboration with the research and development sector. SalMar is working on several projects – both large and small scale – to improve our productivity while helping to solve some of the challenges facing the industry as a whole. representatives from various levels of government are showing a steadily" (p 8)*
2015	*"Salmar has initiated major investments to increase smolt capacity, so that we can achieve self-sufficiency in smolt" (p 8)*

Table 12 - Empirical data - Value configuration - SalMar

Business model data

Year	***1st order concepts: Statement in annual report***
2011	*"Strategy is normally discussed during the autumn, ahead of the Group's budget process. Within the area of strategy, the board shall play an active role in setting management's course, particularly with regard to organisational restructuring and/or operational changes" (p 22)*
	"We in SalMar have always had an absolute focus on sustainability regarding our operations. This commits. Strong biological control, constantly seeking new and better business models, and a strong ecological focus are just some of the areas we are working with to ensure sustainability in everything we do" (p 107)
2014	*"Through the development and realisation of new technology, and through the acquisition of operational experience, Ocean Farming will possess the particular competence needed by the next generation of fish farming" (p 14)*
2016	*"In the long haul, it will be those companies which through dedication and sound decisions, best use the good times to position themselves for the future, that will emerge as winners. This is fundamental in SalMar's thinking, management and positioning" - Trond Williksen, President & CEO (p 9)*

Table 13 - Empirical data - Business model data - SalMar

4.1.4 Grieg Seafood

Strategic typology

Year	*1st order concepts: Statement in annual report*
2011	*"Grieg Seafood har fortsatt et større uutnyttet volumpotensial på eksisterende lisenser. Fokus vil fremover være på ytterligere å ta ut det potensialet som finnes i Norge, både produksjonsmessig og kostnadsmessig" (p 17)*
2012	*"Grieg Seafood har fortsatt et større uutnyttet volumpotensial på eksisterende lisenser. Fokus vil fremover være på ytterligere å ta ut det potensialet som finnes i Norge, både produksjonsmessig og kostnadsmessig" (p 17)*
2014	*"Grieg Seafoods viktigste mål er å forbedre konsesjonsutnyttelse, samt redusere kostnader gjennom kontinuerlig forbedring av de biologiske prestasjoner. Det arbeides kontinuerlig med forbedringer av interne rutiner og opplæring av ansatte. Hovedfokus fremover er fortsatt å øke produksjonen på eksisterende lisenser i Norge, i tillegg til å fullføre snuoperasjonene på Shetland og BC" (p 16)*
2015	*"Blant utfordringene vil jeg nevne konsesjons- og kapasitetsutnyttelsen, som fremdeles er for lav i forhold til praktisk kapasitet i konsernet. Administrasjonen jobber med å øke utnyttelsen, spesielt ved våre norske lokaliteter, som har størst potensial i dagens marked. Økt kapasitetsutnyttelse vil bidra til kostnadsbesparelser" (p 3)*

Table 14 - Empirical data - Strategic typology - Grieg Seafood

Value configuration

Year	*1st order concepts: Statement in annual report*
2011	*"A major programme of investment in smolt production in all four regions aimed at reducing future production costs." (p 2)*
2014	*"Ocean Quality utvider sin virksomhet til også å gjelde salg av Grieg Seafood sin fisk i BC. Dette er iverksatt fra og med 2015. Ocean Quality North America Inc. er eid 100% av Ocean Quality AS. Den biologiske situasjonen var vært god i starten av 2015" (p 15)*
2015	*"Det ble åpnet nytt settefiskanlegg på Shetland. Anlegget er i full drift og fungerer i tråd med planer. Anlegget skal gjøre oss selvforsynte med smolt." (p 11)*

Table 15 - Empirical data - Value configuration - Grieg Seafood

Business model data

Year	*1st order concepts: Statement in annual report*
2011	*"The Group shall be a leader in the area of aquaculture." (p 2)*
2013	*"Vi endrer vår organisasjonsmodell for å få sterkere fokus og bedre vår evne til å ta ut synergier og erfaringsoverføring mellom enhetene innenfor både oppdrett og salg. Vi er godt i gang med integreringen av salget fra vår skotske virksomhet i Ocean Quality og vil fortsette med salget i Nord- Amerika. Alt salg vil dermed etter hvert gå igjennom en felles global salgsorganisasjon noe som vil gjøre oss enda bedre og mer komplett som leverandør. Tilsvarende styrkes organisasjonen innen oppdrett med ansettelsen av en egen oppdrettsansvarlig på konsernnivå. Dette skal bedre vår evne til erfaringsoverføring og synergiuthenting på tvers av oppdrettsregionene og er et viktig element i driftsmessig forbedring og optimalisering" (p 4)*

2014	*"2015 skal bli et godt år for Grieg Seafood. Vi skal fullføre en rekke igangværende prosjekter, blant annet en ny IT-plattform for å øke samhandlingen mellom lokaliteter, selskaper og regioner, skape grunnlag for benchmarking av våre resultater og vise fram det beste ved vår virksomhet. Vi skal også optimalisere forholdet mellom produksjon av settefisk og fisk i sjø, noe som vil føre til at alle regioner oppnår en tilstrekkelig smoltforsyningsgrad. Vi skal ta i bruk ny teknologi og nye sjølokaliteter, og vi skal oppgradere kapasiteten med fire nye konsesjoner i Finnmark, samt en ny lokalitet i Skottland. Med etableringen av Ocean Quality i det amerikanske markedet fra og med 2015 dekker salgsselskapet nå alle våre fire regioner" (p 4)*
	"Grieg Foundation. Gjennom å være en del av Grieg Gruppen bidrar vi også med 25 % av et eventuelt utbytte til stiftelsen Grieg Foundation gjennom vår eier Grieg Holdings AS. Dette utbyttet går til internasjonale og nasjonale formål som blant annet SOSbarnebyer, Haukeland sykehus, kunst og kultur med mer. Grieg Foundations bistand er i hovedsak rettet mot:Medisinsk forskning og helse prosjekter generelt, Musikk eller andre kulturelle formål, Sport og utdanning" (p 34)
2015	*"Som ny konsernsjef har jeg møtt svært mange kompetente folk med stor stå på-vilje, og jeg ser det som min oppgave å inspirere og videreutvikle det gode samarbeidet mellom regionene og administrasjonen." (p 3)*
	"Det er i 2016 satt i gang en strategisk gjennomgang av selskapets virksomhet på Shetland." (p 17)
2016	*"Organisasjonen har stått samlet i alle ledd, og våre medarbeidere har «gitt alt» for å virkeliggjøre visjonen om å oppnå perfeksjon som ett konsern. I løpet av året har vi med god støtte fra styret tatt viktige grep internt i konsernet. Under slagordet «time to step up» har vi igangsatt programmer som har mobilisert talent og motivasjon for å bli den beste aktøren i våre områder" (p 3)*
	"“Grieg Seafood har satt seg et mål om å bli den beste leverandøren av sunn og næringsrik mat” (p 3)

Table 16 - Empirical data - Business model data - Grieg Seafood

4.1.5 Norway Royal Salmon

Strategic typology

Year	**1st order concepts: Statement in annual report**
2011	*"The market is strong, and develops into both existing and new markets" (p 4)*
	"The main focus for all employees in NRS is daily improvements in our work. This applies to our pursuit of further efficiency of salmon production through reduction of the company's production costs, and in terms of sales and marketing of salmon in the best-paying markets" (p. 4)
	"The Group's planned growth through utilisation of capacity in the existing licences" (p 9)
	"The Group has undertaken no activities during the year which may be defined as research and development" (p 28)
2012	*"There has been considerable focus on organisational development during the last year, and going forward we expect this to be important both in our salmon production and in our trading activities" (p 5)*
	"NRS has a strong focus on biological production and fish welfare and has initiated or is participating in the following projects" (p 34)
2013	*"The main issue for both NRS and the industry will be to search for improvements for efficient and sustainable production" (p 6)*
2015	*"Through our strategy, we have aimed to be one of the most profitable farming companies in Norway, and this means that we must have control over cost also in periods of good prospects" (p 7)*

2015	*"We are working on several exciting projects that will develop NRS from a medium-sized to large salmon farming company. Hatcheries for optimization of smolt logistics and development licenses are some of the projects. We have, together with Aker ASA, applied for 15 development licenses, the companies have developed an offshore salmon farming concept that facilitate sustainable growth in areas that the aquaculture technology thus far has not been able to exploit. This exciting project will contribute to the development of the aquaculture farms of the future" (p 7).*

Table 17 - Empirical data - Strategic typology - Norway Royal Salmon

Value configuration

Year	**1st order concepts: Statement in annual report**
2011	*"In addition to the sales organisation – which constitutes the origin of the group – the Group currently has four subsidiaries that own a total of 25 licences. The Group also holds minority interests in seven companies, three of which are fish farming companies with a total of eight licences between them. There are also three harvesting plants and two smolt companies among these companies. The Group is thus involved in almost all links of the value chain, from smolt and salmon production, through harvesting and on to sales and marketing." (p 9)*
	"The chain activities in NRS comprise a range of service offers intended to allow our partner producers to enjoy benefits of scale to which they would not otherwise have access" (p 11)
	"The strategy of the Group is to run effective fish farming operations, as well as to sell the output from associates and partners directly to the market" (p 26)
	"The company's object is to produce, process, sell and distribute farmed fish, and to invest in other companies in the seafood business, in addition to provide quality assurance and chain activities for partner companies (p 20)
	"In a competitive market, this ensures good access to high-quality fish from a network consisting of own subsidiaries, associates, chain members and external producers" (p 11)
2012	*"Acquisition resulting in 37,75% ownership of Ranfjord Fiskeprodukter AS" (p 6)*
	"The company's object is to produce, process, sell and distribute farmed fish, and to invest in other companies in the seafood business, in addition to provide quality assurance and chain activities for partner companies" (p 24)
2013	*"The company's object is to produce, process, sell and distribute farmed fish, and to invest in other companies in the seafood business, in addition to provide quality assurance and chain activities for partner companies" (p 30)*
2015	*Foundation of the wholly-owned subsidiary NRS Settefisk AS" (p 11)*
	"[..] NRS has decided that we wish to establish a new hatchery on Karlsøy in Troms" (p 7)
	"Acqusition resulting in 100% ownership of Nord Senja Laks AS" (p 11)

Table 18 - Empirical data - Value configuration - Norway Royal Salmon

Business model data

Year	*1st order concepts: Statement in annual report*
2011	*"NRS has from its foundation in 1992, gone from being a sales and marketing company to an integrated fish farming company. " (p 8)*
	"In 2011 NRS is now a fish farming company with activities in two main segments; (1) fish farming and (2) sales. In 2011, the Group's farming operation harvested 18,781 tonnes of fish, while the sales organisation sold over 50,000 tonnes of salmon and trout" (p 8).
	"NRS has in the last years focused heavily on transforming from being a salmon exporter to also being a salmon producer. The company has had an offensive investment strategy with strong focus on building efficient salmon farming systems. After substantial investments, the company presents itself as a modern company with new and efficient production equipment. There has also been considerable focus on organisational development in this period, going forward we expect this to be important both in our food fish production and in our trading activities" (p 4)
	"The organisational change is done to clarify the Group's main business, and for further focus on targeted development of these key areas" (p 15)
2012	*"NRS has in the last years focused heavily on transforming the company from being a salmon exporter to also being a salmon producer. The company has had an off extensive investment strategy with strong focus on building efficient salmon farming operations. After substantial investments, the group presents itself as modern with new and efficient production equipment. The last few years have consequently been capital intensive as the group has grown organically, and the group has recently achieved almost full utilization of existing production capacity" (p 5)*
	"NRS has a strong focus on biological production and fish welfare and has initiated or is participating in the following projects" (p 34)
2014	*"[..] the objective is to become Norway's most profitable salmon producer, and develop from a medium-size to a large aquaculture enterprise" (p 7)*
	"Last autumn we asked employees which values NRS should have moving forward. [...] The response showed that our value should be: Safe, Engaged, Innovative, and Credible. These values will help create a strong identify and a clear corporate culture" (p 7)

Table 19 - Empirical data - Business model data - Norway Royal Salmon

4.2 Supplementary source

4.6.1 Demographic characteristics of the CEO

Company	Top Management (CEO)	Background	Education	Years CEO	Reference
Marine Harvest	Alf-Helge Aarskog	- >15 years of industry experience (e.g. Lerøy) - 0 years of experience from other industries	- MSc Aquaculture – NMBU	2010-Present	(Bloomberg, 2018a)
Lerøy Seafood Group	Henning Beltestad	- 25 years of industry experience (e.g. Lerøy) - 0 years of experience from other industries	- MBA - NHH - BSc International Marketing - BI	2010 – Present	(Bloomberg, 2018b)
SalMar	Yngve Myhre	- 15 years of industry experience (e.g. Marine Harvest, Aker Seafood) - 1 years of experience from other industries (e.g. Fazenda Securities)	- MBA – Nord University (1988-1993)	2011-2014	(LinkedIn, 2018f)
	Leif-Inge Nordhammer	- 29 years of industry experience (e.g.CEO of SalMar) - 0 years of experience from other industries	- Education in business – Trondheim Business school	2014 -2016	(Bloomberg, 2018c)
	Trond Williksen	- 23 years of industry experience (e.g. Aker Seafood, AKVA Group) - 7 years of experience from other industries (e.g. KPMG)	- MBA – University of Washington (1991-1994) - Aquaculture management – Nord University (1984-1987)	2016-Present	(LinkedIn, 2018e)
Grieg Seafood	Morten Vike	- 3 years of industry experience (e.g.Grieg Seafood) - 14 years of experience from other industries (e.g. Rieber & Søn ASA)	- MBA – NHH (1990-1994)	2008-2014	(LinkedIn, 2018d)
	Atle Harald Sandtorv	- 5 years of industry experience (e.g. CFO in Grieg Seafood) - >10 years of experience from other industries (e.g. Tide ASA)	- MBA – NHH (1990-1994)	2014-2015	(LinkedIn, 2018a)
	Andreas Kvamme	- 16 years of industry experience (e.g. Marine Harvest) - 18 years of experience from other industries (e.g. Gilde Agro)	- Education from agriculture and business administration	2015 - Present	(Reuters, 2018)
Norway Royal Salmon	John Binde	- 7 years of industry experience (e.g. Marine Harvest) - 20 years of experience from other industries (e.g. Erling Haug AS)	- MSc Mechanical Engineering – NTNU (1980-1984)	2004-2014	(LinkedIn, 2018c)
	Charles Høstlund	- 13 years of industry experience (e.g. Marine Harvest) - 0 years of experience from other industries	- EMBA – NHH (2011-2013) - MSc Fish Health – UiT (1996-2001)	2014 - Present	(LinkedIn, 2018b)

Table 20 - Demographic characteristics of the CEO

4.6.2 List of largest shareholders

Company	Largest shareholder	Owner	Percentage	Board member position	Seafood as primary investments
Marine Harvest	Geveran Trading	John Fredriksen	15.02 %	Yes	No (Shipping)
Lerøy Seafood Group	Austevoll Seafood	Møgster Group	52.69 %	Yes	No (Shipping)
SalMar ASA	Kverva AS	Gustav Witzøe	53.40 %	Yes	Yes (Aquaculture)
Grieg Seafood	Grieg Holding AS	Grieg Family	49.97 %	Yes	Yes (Aquaculture)
Norway Royal Salman	Gåsø Nærings	Harald Gåsø	15.56 %	Yes	Yes (Aquaculture)

Table 21 - List of largest shareholders (adapted directly from the respective companies' website per April 12th 2018)

5 Results

The chapter presents the discussions and critical reflections of the empirical findings. The first sub-chapter 5.1 analyze each of the five companies individually but make use of the same four sub-sections including value configuration, strategic typology, business model innovation and the upper echelons mental models. This to ensure accuracy of how the empirical data is interpreted and presented to the reader. Sub-chapter 5.2, provides the reader with a summary of the main empirical findings. Along the analysis and discussion of the findings, theory and theoretical perspectives have been integrated throughout the chapter. This, to provide the reader with a holistic view of the links between proceeding research and current empirical findings. The third and last sub-chapter 5.3, presents challenges and any limitations that the empirical data may point to.

5.1 Discussion and critical reflection

5.1.1 Marine Harvest

Value configuration

Through the six year period, the organizational design of Marine Harvest is identified as primarily being structured as a vertically integrated value chain (M. E. Porter, 1985; Stabell & Fjeldstad, 1998). In 2011, the company reorganized and consolidated their business model with the intent of developing one corporate standard. This was accomplished by formally dividing the company into two business units more specifically, farming and sales and marketing. The reorganization changed the business from a geographical- to a functional model (Marine Harvest, 2011).

> *"The purpose of the reorganisation was to strengthen the focus on the Group's core activities, to devote more resources to marketing activities, to improve coordination and development of best practices and value creation." (Marine Harvest, 2011, p. 9)*

> *"Our strategic ambition is to be number one in fish feed, salmon farming and value-added processing" (Marine Harvest, 2013, p. 7)*

In 2012, Marine Harvest chose to invest in an independent feed production unit. Fish feed accounted for nearly half of the company's operational production costs (Marine Harvest, 2012), and demonstrated an industry increase of approximately 50 per cent from the period of 2012 to

2016 (PwC, 2017c). Consequently, investing in one of the most cost-demanding units of the company's value chain is supposed to help the firm reduce operational expenditures (OPEX) and strengthens its position within the marketplace (table 22). This, by being less vulnerable to fluctuation in salmon prices. The upstream expansion is intended to demonstrate a forward looking-measure that innovated the company's value configuration from a salmon-production value chain to a seafood protein value chain. In addition, Marine Harvest expand their downstream unit by acquiring Morpol, one of the world's largest salmon processors (MH; AR2012). The expansion of secondary processing is argued to have transformed the company's value configuration from a classic value chain to include a contract manufacturing component (Plambeck & Taylor, 2005; Stabell & Fjeldstad, 1998). The sourcing of available assets indicates how the firm's configuration reflect a contract manufacturing service rather than a value shop (cf. Fjeldstad & Snow, 2017; Plambeck & Taylor, 2005; Stabell & Fjeldstad, 1998). In contrast to contract manufacturing, a value shop is characterized by delivering customized solutions to client's e.g. hospitals or consultancy firms by providing services through the use of problem solving capabilities (Fjeldstad & Snow, 2017; Plambeck & Taylor, 2005; Stabell & Fjeldstad, 1998). Typical value shop businesses within the aquaculture industry could be exemplified by service-companies such as Fishguard and Pharmaq that specializes in fish-health, or AquaGen and Genomar that focus on breeding and genetics.

> *"During 2012 it was decided to start transforming Marine Harvest from being a production driven, farming company, to become a fully integrated seafood protein producer. The transformation will enable us to capture the total value in our value chain and help us address sustainability challenges in our industry. To achieve this position, the Board sanctioned investments in a feed plant in Norway and the acquisition of Morpol – the world's leading processor of salmon." (Marine Harvest, 2012, p. 13)*

In 2016, Marine Harvest entered into a joint venture with Deep Sea Supply. This amounted for a new business unit namely, Marine Harvest Shipping. The joint venture expanded the service aspect of the company's value chain (Marine Harvest, 2016). What is more, it constituted a cost reduction in that the company reduced the number of leased ships. The agreement was also in line with the strategic objective of capturing the total value of their value chain. Marine Harvest Shipping did not only capitalize on internal services, but also benefitted from external salmon producers for any available assets. Since none of the three value configurations by Stabell and Fjeldstad (1998) fit the firms radical innovation, the study found a possible link to a fourth value

configuration, the “value access” configuration (Fjeldstad, personal communication, April 6. 2018; Lorange & Fjeldstad, 2012; Molineux, 2002). The value access configuration, i.e. contract manufacturing and free capacity, is believed to be relatively similar to the business models used in the shipping industry (Lorange & Fjeldstad, 2012). This because of how they use and capitalize on available assets. For this reason, it is supposed to correspond with Marine Harvests strategic initiatives of both Morpol and Marine Harvest Shipping (Lorange & Fjeldstad, 2012).

> *Further to our integrated marine protein provider strategy, we see an opportunity to streamline production and cut costs related to the operations of work boats, well boats and feed boats, the majority of which are currently leased from third parties. To this end, the Board has decided to evaluate the possibility of establishing a new Business Area, Marine Harvest Shipping. The new Business Area is expected to be built up gradually through organic growth." (Marine Harvest, 2015, p. 21)*

To conclude, the empirical findings show how Marine Harvest has employed several measures to expand and transform the firm’s value configuration. The company has altered their business into becoming a fully integrated protein producing value chain. As findings demonstrate it appears as if the company has developed a hybrid business model that constitutes of a classical value chain and value access (i.e. contract manufacturing and available capacity) logic. Consequently, Marine Harvest has transformed from a production driven salmon-farming company to becoming a fully integrated seafood protein producer.

Year	*1st order concepts: Statement in annual report*	*2nd order themes: Research terminology*	*Aggregate dimensions*
2012	*"Developing "the integrated protein company". In 2012, the Board decided to start transforming Marine Harvest from being a production driven farming company to become a fully integrated seafood protein producer, capturing the total value in the value chain. To achieve this position the Board sanctioned investments in a feed plant in Norway and the acquisition of Morpol, the world's leading processor of salmon" (p 4)*	***Value chain***	***Value configuration***
	"Expanding upstream – greenfield in fish feed Marine Harvest decided in 2012 to enter into feed production. Feed accounts for approximately 50 % of our cost base. Feed is essential with regards to the performance of our fish and the quality of our end product. The positioning in feed is essential in transforming our company from a production oriented farming company to an integrated protein company. Feed will be operated as a separate Business Area in Marine Harvest but interlinked with our other Business Areas, farming and sales and marketing" (p 7)		
	"During 2012 it was decided to start transforming Marine Harvest from being a production driven, farming company, to become a fully integrated seafood protein producer. The transformation will enable us to capture the total value in our value chain and help us address sustainability challenges in our industry. To achieve this position, the Board sanctioned investments in a feed plant in Norway and the acquisition of Morpol – the world's leading processor of salmon. The feed plant will strengthen the Group's production side, secure access to first class feed and improve traceability. The Morpol acquisition will, subject to approval by the relevant competition authorities, provide the Group access to state of the art processing technology and facilities, and provide market access to geographies where Marine Harvest currently has limited presence" (p 13)		
	"Upstream integration - Fish Feed: Feed is a central cost component in production of Atlantic salmon. Feed is also important with regards to sustainability, and for the quality of the end product. Feed production is a new field of operation for Marine Harvest, and through establishing our first factory, we will increase our knowledge with regards to feed ingredients, and more importantly how to adapt the feed to our fish" (p 13)		
	"In Marine Harvest, we see the issues raised above as opportunities, and see them captured in our newly formulated vision - LEADING THE BLUE REVOLUTION. [...] To be the leader, we must be leading in three fields, fish feed, fish farming and in bringing our products to the world. By controlling the full value chain, we can trace our products from feed to fork, and be more proactive in addressing challenges related to sustainable feed, farming and processing" (p 13)		
2013	*"Fish feed production is a new field of operation for us, and, by establishing our first factory, we seek to increase our knowledge of fish feed ingredients and better understand how to adapt the feed to our fish. We believe the feed plant will strengthen the production side of our business model, secure access to high quality feed and improve our ability to control, trace and understand the key input to our product" (p 13)*		
	"The Group's overall ambition is to grow organically as well as through acquisitions. At present, growth is focused on the salmon value chain, from feed to fork, but other species will be considered going forward. In line with this strategy, in October 2012, the Board resolved to develop a feed division to secure access to high-quality feed. The Group's first feed production unit is located in Norway. Construction is developing according to plan and production is expected to commence in 2014. Through the Morpol acquisition, the Group's production of value-added seafood will increase significantly. This is an important element in controlling the entire value chain" (p 103)		
2014	*"The Group's overall ambition is to grow organically as well as through acquisitions. At present, growth is focused on the salmon value chain, from feed to fork, but other species will be considered going forward. In line with this strategy, in October 2012, the Board resolved to develop a*		

	feed division to secure access to high-quality feed. The Group's first feed production unit is located in Norway. Construction is developing according to plan and production is expected to commence in 2014. Through the Morpol acquisition, the Group's production of value-added seafood will increase significantly. This is an important element in controlling the entire value chain" (p 103)		
	"At Marine Harvest, we believe the smart way of supplying a growing world population with healthy, nutritious protein products, is by cultivating the ocean. To lead the "Blue Revolution" our ambition is to be a world-leading, integrated producer of seafood proteins. In order to achieve this, we aim to capitalize on our integrated value chain and be the leader in three key areas – salmon feed, salmon farming and in meeting the needs of the market." (p 14)		
2015	*"We aim to capitalize on our integrated value chain in order to achieve our ambition to becoming a world leading, integrated producer of seafood protein" (p 7)*		
	"Further to our integrated marine protein provider strategy, we see an opportunity to streamline production and cut costs related to the operations of work boats, well boats and feed boats, the majority of which are currently leased from third parties. To this end, the Board has decided to evaluate the possibility of establishing a new Business Area, Marine Harvest Shipping. The new Business Area is expected to be built up gradually through organic growth, starting with the recruitment of a Chief Operating Officer in 2016" (p 21)		
	"We aim to capitalize on our integrated value chain in order to achieve our ambition to becoming a world leading, integrated producer of seafood protein" (p 7)		
	"Strategic direction. We continue to develop our three operational pillars: fish feed; salmon farming; and value-added production and sales, where the latter has become an area of increasing focus for us. In recent years, logistics at sea has gradually become more integrated into our farming operations, making us more dependent upon the availability of suitable vessels for our success. In 2016, we will therefore evaluate the potential benefits of establishing our own fleet of feed supply and other vessels that operate in close proximity to our fish" (p 8)		
	"2015: Board decision to build a feedplant in Scotland and explore the possibility of a new Business Area – Marine Harvest Shipping" (p 11) "Further to our integrated marine protein provider strategy, we see an opportunity to streamline production and cut costs related to the operations of work boats, well boats and feed boats, the majority of which are currently leased from third parties. To this end, the Board has decided to evaluate the possibility of establishing a new Business Area, Marine Harvest Shipping. The new Business Area is expected to be built up gradually through organic growth, starting with the recruitment of a Chief Operating Officer in 2016" (p 21)		
	"In 2016 Marine Harvest will continue to invest across the value chain to support organic growth" (p 122)		
2016	*"We believe there are benefits to vertical integration, due to the greater capacity it gives us to control the production process. We refer to activities which occur after farming (i.e. secondary processing) as downstream operations and activities occurring prior to farming (i.e. feed production) as upstream operations. Our integrated production helps us stabilize costs, control the quality of our products and improve efficiency. Over time, vertical integration is expected to result in more stable earnings and unlock future growth. We expect to be less exposed to the cyclical nature of salmon prices, and be better able to control the quality of our products" (p 25)*		
	"Further to our integrated marine protein provider strategy, we have entered into a 50/50 aquaculture shipping joint venture with Deep Sea Supply PLC to build, own and operate aquaculture vessels. We believe there is significant room for efficiency improvements across the value		

	chain in aquaculture shipping, ranging from a reduction in new building costs to more cost-efficient operations. In 2016 the JV contracted its first two newbuilds, one well boat and one harvest vessel" (p 26)		
	"Our R&D projects grouped under value chain optimization encompass projects seeking to boost efficiency and reduce costs throughout the value chain, from farming and harvesting, to primary and secondary processing" (p 34)		
2012	*"Marine Harvest has activities in many countries and we believe that sharing best practice is an important tool for continuous improvement. The Food Safety & Quality network in Marine Harvest includes members from all our processing facilities and salmon producing units. This network will continue to share knowledge, identify common KPI's, and ensure clear responsibilities for implementation of agreed actions in each unit" (p 45)*	***Value shop***	
2013	*"Through its robust business model, Marine Harvest is well positioned for acquisitive and organic growth going forward. Several specific opportunities for growth are closely monitored and some actions have already been taken, including the entry into forward contracts to purchase a 25.8% stake in Grieg Seafood. This acquisition was cleared by the Canadian competition authorities on March 3, 2014 and is currently awaiting approval by the Ukrainian Anti Monopoly Committee" (p 100)*		
2015	*"In January 2015, a conditional agreement to merge Marine Harvest Chile with AquaChile was entered into. Subject to approval, the merged company will be the second largest salmon company in the world. Marine Harvest will own 42.8% of the new entity, with an option to acquire up to a minimum of 55% after June 15, 2016" (p 6)*		
2013	*"Through active involvement in national and industry research strategy groups, we address important research areas for the industry. We conduct trials at private and public research facilities and our technical staff is also invited to participate in or lead numerous public and private sector research projects – a clear recognition of our R&D competence and reputation by the industry, the authorities and scientific institutions" (p 32)*	***Value network***	
2014	*"Learning more about exposed farming". "From 2015, we will be part of a research center for exposed aquaculture operations, uniting strong scientific institutions with ambitious industry players. The center will engage in both basic and applied research. Areas of investigation will include systems for remote operations, monitoring and operational decision support, structures and vessels for exposed operations, safety and risk management. In addition, fish behavior and welfare will have special emphasis" (p 32)*		
2015	*"Projects to support our operational goals are undertaken in collaboration with external partners, through partnerships with leading institutions across the globe, and at our own dedicated R&D facilities throughout our Group" (p 39)*		
2016	*"Projects to support our operational goals are undertaken in collaboration with external partners, through partnerships with leading institutions across the globe, and at our own dedicated R&D facilities throughout the Group" (p 31)*		
	"Further to our integrated marine protein provider strategy, we have entered into a 50/50 aquaculture shipping joint venture with Deep Sea Supply PLC to build, own and operate aquaculture vessels. We believe there is significant room for efficiency improvements across the value chain in aquaculture shipping, ranging from a reduction in new building costs to more cost-efficient operations. In 2016 the JV contracted its first two newbuilds, one well boat and one harvest vessel" (p 26)		

Table 22 - Analysis of findings - Value configuration - Marine Harvest

Strategic typology

Since 2011, Marine Harvest has identified itself as the leader within the aquaculture industry. This is also clearly reflected in the company's actions, through their high attention to R&D and use of technology assets to confront future industry challenges (Marine Harvest, 2011). To match their ambitions, the company's new vision – leading the blue revolution was launched in 2013 (table 23). The employment of strategies throughout the research period is intended to evidently show the shift in the firm's strategic orientation. The findings will be further discussed and critically reflected below.

> *"At Marine Harvest, we have a bold vision of continuous transformation in fish-feed production, farming, processing, product development, and sales and marketing, all of which are essential for continuous growth in this rapidly developing industry. We call it Leading the Blue Revolution."(Marine Harvest, 2016, p. 10)*

Over the six-year period, Marine Harvest nearly doubles its R&D spend in accordance with its increased revenues (figure 12). This is perceived as a confirmation that the company acts on its ambition to be at the forefront and a leader within the industry.

> *"Marine Harvest has a strong focus on R&D, seeing it as crucial to further develop and strengthen the relatively young salmon farming industry. Our effort within this area is recognised by the industry, our competitors, the authorities and other external parties, reflected by the significant involvement of our technical staff in statutory and industry-led research projects and programmes."(Marine Harvest, 2012, p. 53)*

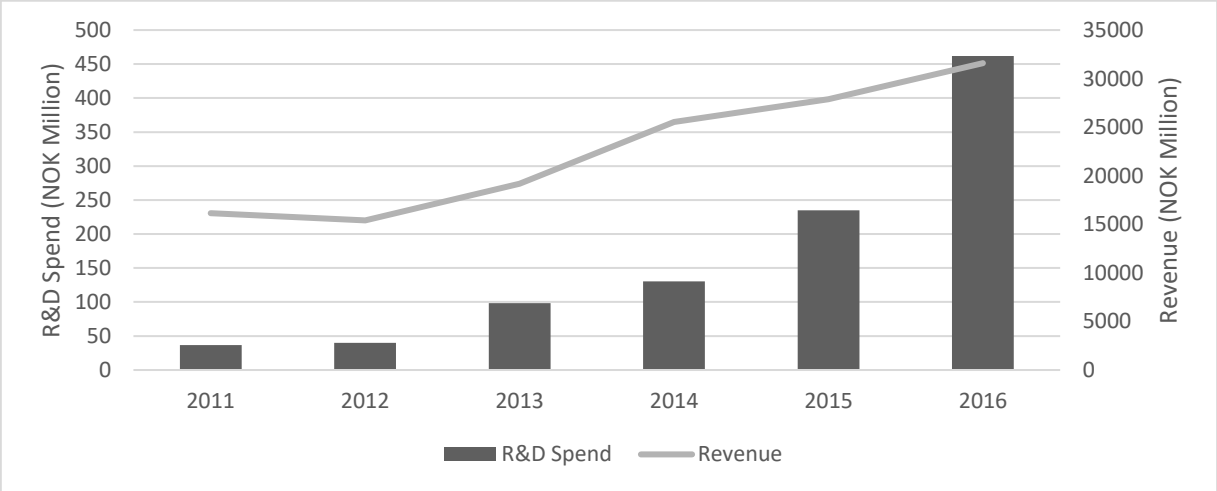

Figure 12 - Marine Harvest 2011-2016 R&D spend versus revenue (Marine Harvest, 2011, 2012, 2013, 2014, 2015, 2016)

In 2011 and 2012, to tackle the industry threats such as operational effectiveness and biological challenges, the firm employed strategies that were largely focused on research and development. The research projects were primarily conducted as a collaborative effort within the industry including producers, suppliers and research-institutes (Marine Harvest, 2011). Moreover, the company initiated strategic measures to invest in vertical integration through the implementation of a feed production unit. The strategies of vertical integration and R&D is supposed to be consistent with the company's strategic objective, and therefore believed to also hold a defensive orientation. However, the initiatives also seem to indicate a tendency to become more prospective in their strategic orientation, moving forward (Miles et al., 1978).

> *"Due to the decline in the salmon prices, Marine Harvest has taken measures to protect the cash flow. These include reduced smolt stocking, implementation of a global cost reduction programme and reduction in CAPEX." (Marine Harvest, 2011, p. 4)*

By releasing its new vision, it is observed how Marine Harvest transform their business accordingly. This could be demonstrated through their employment of more proactive strategies, promotion of environmental change, in addition to increasing investments related to product- and technology development (figure 12) (e.g. Marine Harvest, 2013, pp. 34-35). These actions were also evidently reflected in their annual report, as exemplified below (Miles et al., 1978; Snow et al., 2011).

> *"A revolution does not occur by itself – we have to make it happen. At Marine Harvest change is about challenging existing ways – over and over again. We believe that change is an opportunity. We encourage our staff to try new things, and sometimes we fail. But the important thing is that we learn from it." (Marine Harvest, 2014, pp. 16, 19)*

Marine Harvest dedication through increased investments in product innovation may also be interpreted to reflect the company's intent to strengthen its footprint in key markets. Examples of such strategic investments include the MOWI brand in Japan, Supreme Salmon in Taiwan and Rebel Fish in the United States, all related to the company's focus on product innovation (Marine Harvest, 2013). The company has also taken strategic measures organically as well as through partnerships and alliances. This, to increase the engineering expertise within the firm's global research unit (Marine Harvest, 2013). An example is the open innovation initiative (Chesbrough, 2003, 2012), partnering with Hauge Aqua. This was related to the development of the farming concept "the egg". In line with this, Marine Harvest applied for development licenses on two innovative farming concepts more specifically, "the ship" and "the marine doughnut". All these

initiatives are interpreted to demonstrate forward-looking measures in respect to a challenging industry (e.g. biological and increased sea temperature).

> *"We have recently applied for 14 development licenses for testing and development of a new closed farming technology called the "Egg". The Egg potentially offers many advantages to conventional salmon farming methods such as cost reductions from reduced sea lice treatment, reduced fish escapes and better feeding control." (Marine Harvest, 2013, p. 19)*

As a conclusion to their strategic orientation, Marine Harvest has maintained and advanced proactive measures by developing multiple solutions that were supposed to handle environmental threats. These strategic initiatives seem to not only affect the company itself, but the entire industry (Miles et al., 1978). Considering this, it is therefore evident to show how the firm has transitioned from a defensive to a prospect-oriented organization.

Year	*1st order concepts: Statement in annual report*	*2nd order themes: Research terminology*	*Aggregate dimensions*
2011	*"Due to the decline in the salmon prices, Marine Harvest has taken measures to protect the cash flow. These include reduced smolt stocking, implementation of a global cost reduction programme and reduction in CAPEX" (p 4)*	***Defender***	***Strategic typology***
	"The company was reorganized into two new business areas with effect from 1 april: Farming and Sales and marketing" (p 4)		
	"We are well prepared to handle the currently challenging market, and continue our efforts to improve production, environmental performance and increase value-creation in our new business area Sales and marketing. {...] We expect a significant increase in supply also in 2012 and have taken necessary measures to preserve our financial strength in 2012, by reducing smolt stocking, investments, and cut in operational costs." (p 7)		
	"In 2011, we changed our organisation from a geographical to a functional model. The purpose is to strengthen our ability to add value to farmed salmon and sourced seafood. our new business area Sales and marketing is now measured on its ability to increase margins, and should gradually strengthen the Group's market orientation and move us closer to the end market" (p 7)		
	"Marine Harvest's research and development (R&D) activities are coordinated by Marine Harvest technical services team which was established in early 2011 after a merger of the Group technical team with Marine Harvest Norway's technical team. All projects coordinated or run by this team and by specialists in the different business units, are followed up in a global project management system" (p 18)		
2011	*"One key issue the last three years has been sea lice mitigation in Norway. [...] The use of wrasse and hydrogen peroxide, where Marine Harvest has taken a leading role has proven to be effective. In combination with industry wide improvements in treatment-effectiveness and better coordination, we have seen a combined reduction in medication and sea lice levels. [...] Marine Harvest is participating in several development and research projects together with industry partners and research institutions" (p 7)*	***Analyzer***	
2011	*"Marine Harvest works closely with its suppliers to steer their respective R&D activities in a direction that meets Marine Harvest's priorities and needs. Marine Harvest's ambition is to be a driving force in R&D, targeting growth and profitability of the salmon industry [...] In 2011, the R&D activities resulted in new knowledge about viral diseases, the effect of relevated water temperature on seawater growth, and the potential using triploid fish (sterile fish) in farming.*	***Prospector***	
	"Our focus is on geographical market expansion, utilizing the demand-momentum created by low prices, capital efficiency and cost reduction measures. Marine Harvest is well positioned and will take part in consolidation in the industry going forward. [...] The industry's environmental challenges calls for better regulations, increased investments in R&D [...]" (p 7)		
2012	*"In Marine Harvest, we see the issues raised above as opportunities, and see them captured in our newly formulated vision - LEADING THE BLUE REVOLUTION. [...] To be the leader, we must be leading in three fields, fish feed, fish farming and in bringing our products to the world. By controlling the full value chain, we can trace our products from feed to fork, and be more proactive in addressing challenges related to sustainable feed, farming and processing" (p 13)*		
	"The industry's environmental challenges still require new solutions. Throughout 2012 we strengthened our R&D organisation and we have several on-going projects with promising preliminary results" (p 7)		

	"Product innovation is essential for the future success of Marine Harvest [...]. Through more attention to innovation and product development, Marine Harvest will increase the absolute availability of seafood. This is also the foundation for growth in revenue and profitability over time for our value-added units in Europe, Americas and Asia" (p 46)		
	"Marine Harvest has a strong focus on R&D, seeing it as crucial to further develop and strengthen the relatively young salmon farming industry. Our effort within this area is recognised by the industry, our competitors, the authorities and other external parties, reflected by the significant involvement of our technical staff in statutory and industry-led research projects and programmes" (p 53)		
	"During 2012, Global R&D completed a prioritisation process identifying the key focus areas within R&D. The following areas where identified as key areas where Marine Harvest will put R&D focus both through own direct engagement and through funding and initiating external projects during the coming years; [...]" (p 53)		
2013	*"Product innovation; Internal impacts (within Marine Harvest) - contributes to competitiveness and broadening of the market. External impacts (outside Marine Harvest) - may contribute to customer safety, nutrition, choice and satisfaction" (p 21)*		
	"In connection with the Taipei opening in August, we also opened our first Supreme Salmon street store, a popular concept that see continued development both within food service and retail" (p 7)		
	"Internal impacts (within Marine Harvest) - contributes to improving production efficiency, fish health and technological innovation. External impacts (outside Marine Harvest) - more sustainable solutions will positively impact the environment, communities and customers" (p 20)		
	"Research and Development is a key enabler for "Leading the Blue Revolution". Our R&D activities help us to solve operational challenges in our farming and processing operations and find solutions for the long-term sound growth of our company and the industry as a whole" (p 32)		
	"During 2013, our Group management team decided to strengthen our resources on technological development and innovation. As a result, our Global R&D and Technical department will be expanded with a new team responsible for seawater and freshwater farming technologies. The team will be responsible for the development of new and future farming technology, including freshwater, seawater, fish transport and harvest, as well as supporting operational units in optimization processes and the planning and execution of expansions and new installations" (p 34-35)		
2014	*"Product innovation through value-added seafood products". "We offer a wide range of value added products ranging from steaks, portions and loins to coated, smoked and elaborated products, including ready-to-eat and ready-to-heat products" (p 76)*		
	"In 2014 we introduced the Mowi brand in Japan to explore a business opportunity identified in consumer test groups. [...]. In Taiwain we continue to develop Supreme Salmon as a brand, and have two concept stores to increase awareness and give inspiration to the customers. In 2014 we also developed the Rebel Fish brand for the American market" (p 9)		
	"Being able to offer the full range of salmon products to our customers across Europe gives us a competitive advantage, not only because we are almost alone in being able to do so, but it also gives us economy of scale in production, logistics, product development, etc. An example of our product development efforts is Harbour Infusions" (p 80)		

	"A revolution does not occur by itself – we have to make it happen. At Marine Harvest change is about challenging existing ways – over and over again. We believe that change is an opportunity. We encourage our staff to try new things, and sometimes we fail. But the important thing is that we learn from it." (p 19)		
2015	*"We have recently applied for 14 development licenses for testing and development of a new closed farming technology called the "Egg". The Egg potentially offers many advantages to conventional salmon farming methods such as cost reductions from reduced sea lice treatment, reduced fish escapes and better feeding control. If approved, trials will be conducted in 2016 and 2017 with salmon in pilot and prototype structures. In 2018 the ambition is to deploy ten units to a seawater site" (p 19)*		
	"We view R&D and innovative thinking as key elements in our efforts to remain at the forefront of these developments and fulfil our vision of Leading the Blue Revolution" (p 37)		
	"2015 at a glance. Development of a five-year R&D strategy to set the course and define key focus areas and goals" (p 37)		
	"Research and Development (R&D) at Marine Harvest is an engine for sustainable growth, and is integral to our vision of Leading the Blue Revolution. We focus on creating sustainable value and competitive advantage by making improvements and breakthroughs in our Feed and Farming, as well as Sales and Marketing Business Areas" (p 38)		
2016	*"At Marine Harvest, we have a bold vision of continuous transformation in fish-feed production, farming, processing, product development, and sales and marketing, all of which are essential for continuous growth in this rapidly developing industry. We call it Leading the Blue Revolution." (p 10)*		
	"By exploring and utilizing market opportunities, developing new production methods and establishing facilities in new locations, we aim to achieve "new growth". Further expansion of the salmon industry, both land-based and at sea, depends on new and innovative technological solutions [...]. Testing and documenting potential new farming systems in order to ensure further sustainable growth of our Company and industry is given high priority within the R&D and innovation focus. The part of the production cycle that represents" (p 32)		
	"We have therefore applied for development licenses to test the following concepts: the Egg, the Marine Donut and the Ship. A final new concept that we intend to test out, is to widen the area of fish farming, by enabling farming in rougher conditions in more open seas" (p 34)		
	"Through substantial investment in research and development, we intend to be at the forefront of technological advances and address current and future challenges, while growing seafood's share of global protein consumption. We call it the Blue Revolution." Alf-Helge Aarskog, CEO (p 23)		
	"Today, our own brands represent a small part of our business, but we have high ambitions to grow these further and will therefore increase our innovation and brand building efforts" (p 90)		

Table 23 - Analysis of findings - Strategic typology - Marine Harvest

Business model innovation

Marine Harvest's strategic objective seem to be anchored in the company's vision to be at the forefront – leading the blue revolution.

> *"At Marine Harvest, we have a bold vision of continuous transformation in fish-feed production, farming, processing, product development, and sales and marketing, all of which are essential for continuous growth in this rapidly developing industry. We call it Leading the Blue Revolution. […] Leading the Blue Revolution means continuous transformation. This includes the transformation of our farming practices." (Marine Harvest, 2016, p. 10)*

The vision reflects the firm's commitment to change the organization and innovate its business model accordingly. Also, it is demonstrated how the firm sees this as a continuous process (Marine Harvest, 2014). The empirical findings show how the firm's engagement to transform is apparent and a continuous focus during the research. This could be exemplified in their statements below and will be further discussed and critical reflected upon through the sub-section.

> *"Change is the new "normal" - we are ready for change and are working continuously to improve our operations" (Marine Harvest, 2015, p. 108)*

> *"A revolution does not occur by itself – we have to make it happen. At Marine Harvest change is about challenging existing ways – over and over again. We believe that change is an opportunity. We encourage our staff to try new things, and sometimes we fail. But the important thing is that we learn from it."(Marine Harvest, 2014, pp. 16, 19)*

The investment in feed production, resulted in a new component to Marine Harvest's existing value chain. Investment in the upstream unit is substantial in respect to reduction in OPEX. Regardless, the investment is defined as an incremental innovation to the company's business model. The first business model element that is changed, relate to the company's improved operations, which changed the "value creation mechanism". The second is altered in how the investment provides an increased cash flow protection to external threats (e.g. feed cost) and renewed the "value appropriation mechanisms". In addition, to the alteration of the two business model elements, the feed unit is supposed to have transformed the logic of the company's value configuration. This through expanding the upstream aspect of the value chain (Fjeldstad & Snow, 2017).

In contrast to the growth in the upstream unit, Marine Harvest is considered to have gone through a radical innovation by the company's investment in their downstream unit. Through the acquisition of Morpol, the company transformed one of the largest parts of the value chain, which is the secondary processing unit. The acquisition resulted in extensive experience and knowledge within salmon processing (e.g. customers, trends) of both new and existing geographical regions. The value chain component of secondary processing is not new to the company's business model, nonetheless it has enabled the firm to capitalize on this respective part in the value chain (Marine Harvest, 2013). Prior to acquisition, the production capacity was limited to the firm's own production. Morpol expanded their sales of services to other stakeholders, including external salmon producers (Markides, 2006). Based on these findings, it is evident how the company has innovated several business model elements as well as changed their value configuration (Fjeldstad & Snow, 2017). Through the expansion of the company's customer base, the "role of the customer" shifted. As opposed to only selling to retail units, the company now also capitalize on external producers (Markides, 2006). In accordance, the payment for product differed from the company's initial business model and as a result, changed the "value appropriation mechanisms". This, from solely being dependent on product sales to supplement its offerings to include sales of services. Thirdly, the "value creation mechanism" was changed through how the service-product that Morpol offered was new to the organization. The acquisition also changed to the company's "value proposition", as they now also delivered on a new proposition. Consequently, it could be argued that Marine Harvest has transformed into a more complex business model. Based on the empirical findings, it seems logical to state how the firm has developed into a hybrid model, including the value access configuration, i.e. contract manufacturing component from aligning Morpol with the company (Fjeldstad, personal communication, April 6. 2018; Plambeck & Taylor, 2005), and further integrating this into the downstream part of the complete value chain. What this demonstrate is how the this innovation also has transformed the contingency variable being its value configuration (Fjeldstad & Snow, 2017; Stabell & Fjeldstad, 1998). The contract manufacturing component is analogues to operations in companies such as Orkla ASA and Tine SA. These companies have a primary objective to produce their own products but utilizes the available capacity in their production facilities to produce products for competitors. In 2014, Marine Harvest merged Morpol with Marine Harvest's value-added processing unit. This reflected their continuous measures to consolidate their business units with the intent to increase operational efficiency.

In 2013, Marine Harvest opened a retail- and restaurant unit in Taipei, Taiwan. As a result, the company expanded into a new business area. As opposed to Marine Harvest only selling their products to agencies, retail and restaurant chains, the organization now also sold directly to the end customer through their own physical restaurants and stores.

> *"In connection with the Taipei opening in August, we also opened our first Supreme Salmon street store, a popular concept that see continued development both within food service and retail." (Marine Harvest, 2013, p. 7)*

The retail unit is intended to have changed three elements of the business model. The first being the "role of the customer", that has expanded to new customer segment and direct relation with salmon-consumers. In accordance with a new customer group, Marine Harvest which had previously consisted exclusively of business-to-business transactions, has expanded into business-to-consumer transactions, i.e. "value appropriate mechanism". This demonstrated a shift in the company's revenue mechanism. Related to mechanisms of value creation, both activities and resources is meant to be influenced. This could be exemplified through how the Supreme Salmon unit reshaped characteristics such as the brand, product and therefore also logically, sales and marketing. Due to the brand introduction, the firm transformed one aspect of their sales and marketing unit into retail and restaurants (Marine Harvest, 2013). In light of this, it is believed to show evidence of a third innovation to the company's business model.

In 2016, Marine Harvest entered into a joint venture with Deep Sea Supply and founded the business unit, Marine Harvest Shipping. Based on the empirical findings, the joint venture is meant to have radically altered their business model and value configuration. In respect to Marine Harvest's vertically integrated value chain, the joint venture is supposed to have innovated two business model components. The first being the protection mechanism related to cash flow, i.e. "value appropriate mechanism". This is exemplified through how Marine Harvest, prior to the joint venture, leased service vessels from suppliers. Secondly, the "value creation mechanism" changed as a result of the shipping unit being responsible for the logistics within the company (e.g. through well-boat services) (Fjeldstad & Snow, 2017). More interestingly, with respect to the new business unit as an entity, this is identified as a radical innovation based on how the business area was founded with the intent of becoming an independent service vessel company. Being able to capitalize on available resources is believed to have enabled the firm to innovate all four business model elements including, "value proposition", i.e. products being available to a broader customer base. In turn, this is further linked to the "role of customers". Marine Harvest

Shipping also innovated the firm's "value appropriate mechanism" based on resource utilization, i.e. revenue mechanism and lastly, "value creation mechanism" through activities such as services (e.g. inbound- and outbound logistics).

> *"We are in the process of transforming ourselves from a production-driven fish farming company into an integrated marine protein provider, expanding in fish feed and broadening our secondary processing operations. In line with our strategy, and based on the positive experience from our feed plant in Norway [...] the Board of Directors in December 2015 approved the development of a new feed plant in Scotland. [...] The broadening of the secondary processing operation started with the acquisition of Morpol in 2013. [...] Further to our integrated marine protein provider strategy, Marine Harvest sees an opportunity to streamline production and cut cost related to the operational vessels [...] the Board of Directors have decided to evaluate the possibility of a new Business Area, Marine Harvest Shipping." (Marine Harvest, 2015, p. 112)*

To conclude, it is supposed that the company clearly illustrate a commitment to change and innovation to their organization and business model alike. Empirical findings have shown how these have been both radical and incremental innovations to their business model. This has therefore enabled the company to grow from an integrated salmon producer to becoming an integrated seafood enterprise – well on its way to capture the total value of the salmon production value chain. Marine Harvest has employed several proactive strategies over the six-year period

The upper echelons mental models

The empirical findings demonstrated how Marine Harvest has changed from a defensive to a prospective orientation. Its prospective orientation, and how the organization communicates a mind-set that hold the firm's strategic decision-makers accountable to its way forward, is believed to highly coincide with the upper echelon theory. This is exemplified through how Marine Harvest holds the management team accountable for the strategic direction that has been set for the company (Hambrick & Mason, 1984). This is further reflected in how the firm initiate how they will continue to train and develop their strategic decision-makers to successfully manage organizational change in accordance with external shift (Carpenter et al., 2004; Hambrick & Mason, 1984; Marine Harvest, 2015). What this is believed to illustrate, is the company's recognition of how environmental shifts will have to be tackled from an internal standpoint. In other words, the senior management's mental models must be renewed to remain competitive within the marketplace (Barr et al., 1992; de Gooyert et al., 2014).

"They always say time changes things, but you actually have to change them yourself" Andy Warhol, American artist (1928-1987) (Marine Harvest, 2016, p. 91)

"The organization's efficiency and its ability to learn, as well as communicate and implement required changes, are crucial to our future success. [...] In 2015 we rolled out our leadership principles: Make it happen - Live the values - Inspire people - Think and act. These are traits we are looking for in our leaders. I personally believe that continuous efforts to develop our leaders, as well as the selection of the best leaders for the future, will give us a competitive advantage going forward." (Marine Harvest, 2015, p. 9)

"One of our four leadership principles are; Make it happen: we challenge the existing thinking and promote change and innovation. We encourage people to propose solutions and learn from mistakes." (Marine Harvest, 2014, p. 16)

Examples of strategic measures that has been implemented by the company includes their investments into two new business units, more specifically the construction of the company's feed production and acquisition of Morpol. These decisions are intended to coincide with the empirical findings that illustrated a defensive orientation. The defensive orientations is clearly exemplified through the significant focus on reducing costs, especially in 2011. Due to the volatile pricing market, their cost-reduction programs were believed to be important to not only uphold, but also increase the firm's positive cash flow. Based on this, it is interpreted that the empirical findings demonstrate how the senior management's mental models responded defensively to these environmental threats (Barr et al., 1992; de Gooyert et al., 2014).

"Due to the decline in the salmon prices, Marine Harvest has taken measures to protect the cash flow. These include reduced smolt stocking, implementation of a global cost reduction programme and reduction in CAPEX." (Marine Harvest, 2011, p. 4)

"The transformation will enable us to capture the total value in our value chain and help us address sustainability challenges in our industry. To achieve this position, the Board sanctioned investments in a feed plant in Norway and the acquisition of Morpol – the world's leading processor of salmon." (Marine Harvest, 2012, p. 13)

In 2011, the industry was exposed to high price-volatility (Fish Pool, 2018) and vulnerability due to the relatively high operational production costs (PwC, 2017c). Accordingly, Marine Harvest's purchase of fish feed accounted for nearly 50 per cent of the company's overall

operational costs (Marine Harvest, 2012). This is believed to provide a significant basis to argue how the strategic decision-makers, perceived the environment as a threat, not just to their company itself, but to the entire industry. As opposed to being risk-averse, Marine Harvest demonstrated a risk-seeking behavior. This, both in relation to their investments in feed production and through the acquisition of Morpol, which expanding the business model. The action is perceived as risk-seeking due to how increased investments in volatile price markets could reduce the company's financial liquidity. As such, the behavioral response from the company's management team could be interpreted as consistent with prospect theory (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992). The findings can be further strengthen through previous research claiming how firms confronted with increased threat, will react with a risk-seeking behavior (Chattopadhyay et al., 2001). Elaborating further, the acquisition of Morpol and the consequent business model innovation is intended to coincide to recent academic research that found how companies respond to business model innovation when confronted with situations framed as threats (cf. Saebi et al., 2017).

The launch of the new vision is believed to reflect the shift to a prospective orientation of which the company, for the following years, employed several strategies that were directly rooted in the company's actions. This is evident through several innovations to the firm's business model, which has been previously elaborated.

> *"In March 2013 we launched a new vision – "leading the blue revolution". By this we mean that we want to be a leader in cultivating and growing food in the ocean. We want to make a difference in the world through what we do and who we are. In accordance with the vision we will re-vitalise our corporate values. These will be launched later in the year, building on our history of passion and pride, innovative ideas and sustainable development." (Marine Harvest, 2012, p. 7)*
>
> *"We have a challenging and ambitious vision - "Leading the Blue Revolution" - that sets our direction and outlines possibilities." (Marine Harvest, 2015, p. 18)*
>
> *"A revolution does not occur by itself – we have to make it happen. At Marine Harvest change is about challenging existing ways – over and over again. We believe that change is an opportunity. We encourage our staff to try new things, and sometimes we fail. But the important thing is that we learn from it." (Marine Harvest, 2014, p. 16)*

Looking closer at the innovative initiatives through the acquisition of Morpol, Marine Harvest's board of directors and the top management's antecedents, will be further elaborated and discussed. Tor Olav Trøim and Cecilie Fredriksen are both board members, representing the largest shareholders. Related to their antecedence, they both hold extensive experience from outside industries. Moreover, the largest shareholder, Geveran Trading (owned by John Fredriksen) hold substantial ownership in shipping companies (table 21). In view of this, it might be possible to argue how these hold experiences from other industries, and thus different business models that may affect their mental models (Carpenter et al., 2004; Jones et al., 2011). By elaborating on these findings, it may be indicated how the Gerevan representatives hold different antecedents that affect their mental models in respect to how a business is run (Carpenter et al., 2004; Finkelstein & Hambrick, 1990; Hambrick, 2007). Some examples of such shipping companies include Frontline Ltd., Golden Ocean Group and Deepsea Supply, and how these might have influenced their mental model. These companies adopts business models to charter-out assets as one of their abilities of generating revenues (Lorange & Fjeldstad, 2012). What makes this interesting and compliant with previous business model theory (cf. Lorange & Fjeldstad, 2012), is how the acquisition of Morpol altered Marine Harvest's value configuration. What is more, it allowed the firm to capitalize on free asset capacity. Likewise, the innovation that emerged with the expansion into service vessels is thus meant to reflect a similar intention as the "value access" i.e. available assets within the business model if free capacity opens up in the service industry (Fjeldstad, personal communication, April 6. 2018; Lorange & Fjeldstad, 2012). What these findings could indicate is how the board members mental model might have affected the business model process relative to shipping (Carpenter et al., 2004; Patzelt et al., 2008).

Finally, and as initially explained, Marine Harvest clearly demonstrate how they see the importance of the top management team and their obligation to lead the strategic direction that has been set for the organization. This is strengthened by the semantics of the empirical data. In line with proceeding literature on organizational behavior, Marine Harvest has explicitly stated how the company's organizational outcomes is reflected through the management team, and that the senior management is responsible for the strategic outcomes and decision-making of the firm (Bourgeois & Eisenhardt, 1988; Das & Teng, 1999; Gatignon & Xuereb, 1997; Hambrick & Mason, 1984; Hodgkinson et al., 1999; Narayanan et al., 2011).

"Our managers are selected to lead from the front." (Marine Harvest, 2015, p. 20)

"One of our four leadership principles are; Make it happen: we challenge the existing thinking and promote change and innovation. We encourage people to propose solutions and learn from mistakes."(Marine Harvest, 2014, p. 16)

5.1.2 Lerøy Seafood Group

Value configuration

Lerøy Seafood Group (hereafter Lerøy) holds a network of alliances including industry partners, sub-companies and competitors. Collectively, these alliances make up the complete value chain related to salmon production. In theoretical terms, this is intended to define Lerøy's value configuration logic as a value network (Fjeldstad & Snow, 2017; Stabell & Fjeldstad, 1998).

"Det er viktig at samspillet mellom foretak i verdikjeden som danner nettverket tar utgangspunkt i sluttbruker sine behov og ønsker. Samarbeidspartnere og Lerøy Seafood Group utgjør et forretningsmessig nettverk. Nettverket må sikre gjensidig kompetanseutveksling aktørene imellom. Nettverks foretak må uavhengig av eierskap få gode muligheter til å fokusere på egen kjernevirksomhet samt kapitalisere på stordriftsfordeler og redusert risiko." (Lerøy Seafood Group, 2011, p. 23)

Throughout the six-year period, Lerøy has shown to take active measures in growing its value network, both domestic and internationally. This is evident, through how the company has continued to link nodes within their value network both with industry partners and competitors.

"En viktig del av Lerøy Seafood Groups strategi er å være en helintegrert leverandør av selskapets hovedprodukter, atlantisk laks og ørret, og virksomheten utøves i dag gjennom en rekke datterselskaper i Norge og internasjonalt."(Lerøy Seafood Group, 2014, p. 12)

In 2012, Lerøy entered into a strategic agreement with one of its competitors, SalMar. The strategic alliance benefitted both parties by reducing time and costs related to the processing of salmon (Lerøy Seafood Group, 2012).

"I første kvartal 2012 inngikk Lerøy Seafood Group ASA (Lerøy) og SalMar ASA (SalMar) en strategisk viktig avtale. Avtalen innebærer at Lerøy skal slakte og videreforedle et betydelig volum av sin fisk ved Innovamar på Frøya samtidig som SalMar skal slakte sitt totale produksjonsvolum i nord ved Lerøy sitt anlegg på Skjervøy. Lerøy er svært tilfreds med at partene i alliansen gjennom denne avtalen kan realisere store effektivitetsgevinster og kapitalrasjonalisering. Avtalen er en utvidelse av et

mangeårig samarbeid som Lerøy-organisasjonen er stolt av." (Lerøy Seafood Group, 2012, p. 52)

Through the company's continuous efforts to develop and grow its value network, Lerøy has expanded its alliances with local firms. In connection with the firm's strategy to grow through alliances and acquisitions (e.g. Lerøy Seafood Group, 2011), the organization took a strategic decision to acquire a shareholder majority in one Finish and one Dutch sales and marketing company in 2011. Jokisen Eväät and Rode Beeher are considered two of the largest distribution firms in their respective countries (table 24). In 2013, Lerøy co-founded the sales and marketing company, Lerøy Schile to be accountable for the Danish and German market. These efforts increased the number of nodes within the company's existing value network and is supposed to have strengthened its position within these respective markets.

"I juni 2013 inngikk LSG og Brødrene Schlie Fiskeeksport i Danmark en avtale om å etablere selskapet Lerøy Schlie AS. Det nye selskapet har sitt hovedkontor i Hirtshals i Danmark og skal forestå produksjon, markedsføring og distribusjon av ferskpakket sjømat i Danmark og Tyskland." (Lerøy Seafood Group, 2013, p. 58)

Through the acquisition of Norsk Oppdrettsservice AS that specializes in farming of lumpfish (used in sea lice mitigation), Lerøy continued to grow its value network (table 24). The acquisition was intended to extend the company's value network to include the service industry. And as a result, this allowed Lerøy to capture more value through the holistic salmon production value chain.

"I vår streben etter optimal miljømessig og økonomisk bærekraftig produksjon har vi gjort betydelige investeringer i produksjon av rensefisken rognkjeks. Vi kjøpte i 2014 34 % av Norsk Oppdrettsservice AS, som er ledende på produksjon av denne arten, og som har produksjonsanlegg både i Midt-Norge og Sør-Norge." (Lerøy Seafood Group, 2013, p. 9)

In 2016, Lerøy entered into a 50 per cent ownership agreement with Seistar Holding AS on service vessels (Lerøy Seafood Group, 2016). Findings demonstrate how these are closely linked with the company's strategic objective to grow its service nodes relative to its value network. Additionally, Lerøy took continuous measures to alter the firm's value configuration through the acquisition of Havfisk ASA and Norway Seafood Group. These acquisitions are meant to reflect a radical innovation to Lerøy's value configuration. The reason for this is because of how these

companies combined, make up the value chain related to Lerøy's white fish segment, whilst being inter-linked to the company's sales and marketing unit, which is apart of the Lerøy's value network.

> *"Med 100% eierandel i Havfisk ASA og Norway Seafoods Group AS har Lerøy Seafood Group startet en ny og spennende reise der hvitfisk skal integreres i konsernets veletablerte verdikjede. Dette gjør Lerøy Seafood Group til et helintegrert selskap med kontroll på hele verdikjeden for alt av sjømat fra hav til konsument." (Lerøy Seafood Group, 2016, p. 6)*

What is more, these acquisitions generated a total seafood value chain (e.g. production, processing and and sales), and increased the product portfolio into fishing and processing of white fish (including cod and pollock). On this basis, these strategies are believed to have transformed Lerøy into a hybrid value configuration that consisted of value network configuration with a value chain logic.

Year	*1st order concepts: Statement in annual report*	*2nd order themes: Research terminology*	*Aggregate dimensions*
2011	*"I 2011 og i begynnelsen av 2012 gjennomførte vi to spennende strategiske investeringer i Finland og Holland. [...] Kjøpet av aksjemajoriteten i Rode og Jokisen er et viktig ledd i videreutviklingen av Lerøy Seafood Group sin markedsstrategi, som innebærer satsing på selvstendige lokale enheter, sentralt plassert i viktige sjømatmarkeder." (p 7)*	***Value chain***	***Value configuration***
2016	*"På grunnlag av en kritisk evaluering av verdikjeden og våre arbeidsprosesser har vi konkludert med at vi i dag har størst innflytelse gjennom å arbeide med ulike områder knyttet opp mot fiskeri- og havbruksvirksomheten vårt." (p 44)*		
	"2016 vil bli husket som et av de viktigste årene i selskapets lange historie. Lerøy Seafood Group ASA kjøpte 100 % av aksjene i trålrederiet Havfisk ASA og 100 % av aksjene i Norway Seafoods Group AS. Dette er to av Europas største selskaper innen henholdsvis fangst og foredling av hvitfisk. Konsernet har gjennom denne investeringen fått muligheten til å ta fatt på en ny og spennende utvikling hvor fangst og videreforedling av hvitfisk skal integreres i konsernets veletablerte verdikjede. Lerøy Seafood Group er nå et helintegrert selskap med kontroll på hele verdikjeden på alt av sjømatprodukter fra hav til konsument. Sjømatkonsernet Lerøy Seafood Group er ved inngangen til 2017 i en unik posisjon og godt posisjonert for videre vekst og utvikling." (p 5)		
	"Gjennom Lerøy Seafood Groups veletablerte integrerte verdikjede for rødfisk har konsernet et vesentlig potensial for økt verdiskaping gjennom ytterligere utvikling av markedet for hvitfisk. Dette omfatter å styrke konsernets posisjon som leverandør av fersk/«refreshed» sjømat med et fullt assortiment av sjømatprodukter. Per i dag er styret styrket i sin tro på at oppkjøpet vil generere." (p 77)		
2011	*"Det er viktig at samspillet mellom foretak i verdikjeden som danner nettverket tar utgangspunkt i sluttbruker sine behov og ønsker. Samarbeidspartnere og Lerøy Seafood Group utgjør et forretningsmessig nettverk. Nettverket må sikre gjensidig kompetanseutveksling aktørene imellom. Nettverks foretak må uavhengig av eierskap få gode muligheter til å fokusere på egen kjernevirksomhet samt kapitalisere på stordriftsfordeler og redusert risiko." (p 23)*	***Value network***	
	"Selskapets produktbredde gir salgsfordeler i de fleste markedsområder. Selskapets strategi er å tilfredsstille markedenes økende krav til matvaresikkerhet, kvalitet, produktbredde, kostnadseffektivitet og kontinuerlige leveranser. Dette gjennomføres ved samkjøring av de ulike deler av verdikjeden, produksjonsenheter, konsernets salgsnettverk og etablerte strategiske allianser med oppdrettsbedrifter, fartøyer og produksjonsbedrifter for det vesentlige langs norskekysten. Det arbeides kontinuerlig med videreutvikling av konsernets forretningssystem." (p 23)		
	"Det er viktig at samspillet mellom foretak i verdikjeden som danner nettverket tar utgangspunkt i sluttbruker sine behov og ønsker. Samarbeidspartnere og Lerøy Seafood Group utgjør et forretningsmessig nettverk. Nettverket må sikre gjensidig kompetanseutveksling aktørene imellom. Nettverks foretak må uavhengig av eierskap få gode muligheter til å fokusere på egen kjernevirksomhet samt kapitalisere på stordriftsfordeler og redusert risiko." (p 23)		
	"Konsernet har flere kriterier ved utvelgelse av eventuelle alliansepartnere og investeringsobjekter. Blant annet vurderer konsernet alltid hvilken forutsetning alliansepartneren og investeringsobjektet har for god drift. Dette vurderes med hensyn til den kompetansen som er hos ledelsen, men like viktig er også hvilken kompetanse som finnes i organisasjonen for øvrig. Det er vesentlig at. [...] må eventuelle alliansepartnere eller investeringsobjekter ha en bevisst holdning til hva som ligger i kontinuerlig, kvalitetssikret markedsrettet produksjon." (24)		

	"Produksjonsklyngene i de ulike regionene skal videreutvikles gjennom uttak av synergier på flere områder i tillegg til at miljøene skal trekke veksler på hverandres kompetanse gjennom en utstrakt kompetanseutveksling. Konsernets desentraliserte driftsmodell i produksjonsvirksomheten muliggjør slik utvikling. Konsernets regionale satsing gir etter vår oppfatning grunnlag for en interessant industriell utvikling også ved å skape allianser og samarbeid utover direkte eierskap." (p 25)		
	"Allianser: Verdier skapes av foretak i verdikjeder som danner nettverk. Foretak i nettverk har gode muligheter til å fokusere på egen kjernevirksomhet samt kapitalisere på stordriftsfordeler og redusert risiko. Vi må stadig forbedre konsernets kjernevirksomhet, herunder videreutvikling av langsiktige og forpliktende allianser på leverandør- og kundesiden. Dette vil over tid sikre markedstilpassede, kostnadseffektive løsninger og derigjennom lønnsomhet." (p 30)		
2012	*"Lerøy Seafood Groups historiske vekst har vært tuftet på god drift, oppkjøp, videreutvikling av oppkjøpte selskap og alliansebygging. Styret og administrasjonen jobber kontinuerlig for strategisk fremtidsrettede modeller for konsernets aktiviteter. Disse vil også i fremtiden innebære oppkjøp og fusjoner både oppstrøms og nedstrøms." (p 11)*		
2012	*"I første kvartal 2012 inngikk Lerøy Seafood Group ASA (Lerøy) og SalMar ASA (SalMar) en strategisk viktig avtale. Avtalen innebærer at Lerøy skal slakte og videreforedle et betydelig volum av sin fisk ved Innovamar på Frøya samtidig som SalMar skal slakte sitt totale produksjonsvolum i nord ved Lerøy sitt anlegg på Skjervøy. Lerøy er svært tilfreds med at partene i alliansen gjennom denne avtalen kan realisere store effektivitetsgevinster og kapitalrasjonalisering. Avtalen er en utvidelse av et mangeårig samarbeid som Lerøy-organisasjonen er stolt av." (p 52)*		
2014	*"I vår streben etter optimal miljømessig og økonomisk bærekraftig produksjon har vi gjort betydelige investeringer i produksjon av rensefisken rognkjeks. Vi kjøpte i 2014 34 % av Norsk Oppdrettsservice AS, som er ledende på produksjon av denne arten, og som har produksjonsanlegg både i Midt-Norge og Sør-Norge. I tillegg har vi bygget ut to egne anlegg for produksjon av Rognkjeks, samt at vi tidlig i 2015 kjøpt en produsent i Nord-Norge. Lerøy vil i fremtiden være selvforsynt med rognkjeks i alle regioner." (p 9)*		
2013	*"Styret ser på bakgrunn av konsernets mangeårige satsing på alliansebygging, utvikling av kvalitetsprodukter, markedsutvikling, kvalitetssikring og merkevarebygging, fortsatt gode muligheter for økt verdiskapning for selskapets aksjonærer og konsernets viktige samarbeidspartnere. Konsernet vil i tiden som kommer videreføre sitt arbeid for varig bærekraftig verdiskapning gjennom fokus på strategisk forretningsutvikling og effektivisering av drift." (p 58)*		
2013	*"I juni 2013 inngikk LSG og Brødrene Schlie Fiskeeksport i Danmark en avtale om å etablere selskapet Lerøy Schlie AS. Det nye selskapet har sitt hovedkontor i Hirtshals i Danmark og skal forestå produksjon, markedsføring og distribusjon av ferskpakket sjømat i Danmark og Tyskland." (p 58)*		
2014	*"I vår streben etter optimal miljømessig og økonomisk bærekraftig produksjon har vi gjort betydelige investeringer i produksjon av rensefisken rognkjeks. Vi kjøpte i 2014 34 % av Norsk Oppdrettsservice AS, som er ledende på produksjon av denne arten, og som har produksjonsanlegg både i Midt-Norge og Sør-Norge. I tillegg har vi bygget ut to egne anlegg for produksjon av Rognkjeks, samt at vi tidlig i 2015 kjøpt en produsent i Nord-Norge. Lerøy vil i fremtiden være selvforsynt med rognkjeks i alle regioner." (p 9)*		

2016	*"Lerøy Seafood Groups historiske vekst har vært tuftet på god drift, oppkjøp, videreutvikling av oppkjøpte selskaper og alliansebygging. Styret og administrasjonen jobber kontinuerlig med strategisk fremtidsrettede modeller for konsernets aktiviteter. Disse vil også i fremtiden innebære oppkjøp og fusjoner både oppstrøms og nedstrøms." (p 15)*		
	"I 2016 fikk Lerøy Seafood Group tilgang på den nye brønnbåten «Seihav» gjennom selskapet Seistar Holding AS, hvor LSG har en eierandel på 50 %." (p 6)		
	"I 2016 fikk Lerøy Seafood Group tilgang på den nye brønnbåten «Seihav» gjennom selskapet Seistar Holding AS, hvor LSG har en eierandel på 50 %. Seihav er utstyrt med topp moderne teknologi og utstyr, og er bygget for å frakte levende fisk og smolt til og fra merder og slakteri. I tillegg kan Seihav håndtere aktiviteter knyttet til sortering av fisk samt ulike metoder knyttet til behandling mot lus og AGD. Båten, som kan laste opp til 550 tonn levende fisk, kommer i all hovedsak til å operere Hordaland og deler av Sogn og Fjordane." (p 6)		

Table 24 - Analysis of findings – Value configuration - Lerøy Seafood Group

Strategic typology

Lerøy's strategic objective is to be proactive in its innovation and development of new and innovative products. More so, the organization has described how they aim to be the first to enter new markets.

> *"Helt sentralt i Lerøy Seafood Groups vekststrategi er å tilby nye produkter til nye markeder. For å kunne gjøre dette må man kjenne, og være nær, kunden og markedet." (Lerøy Seafood Group, 2014, p. 17)*

Lerøy's strategic focus of becoming an industry leader within technology and market expansion, seem to have increased through the course of the empirical data (table 25). This could be exemplified by Lerøy's increased focus on growing into new markets, innovative products as well as commercialization related to aquaculture and fishery. The organization describe how their goal is to have a high focus on innovation, operational effectiveness, and technology development. This, to strengthen the firm's competitive advantage (Lerøy Seafood Group, 2014). Based on this, Lerøy's high organizational priority in respect to its first-mover strategy, product- and technological innovations. Because of this, the empirical findings are interpreted to reflect the company's strategic orientation. More specifically, it is supposed to demonstrate how the firm's orientation relates to being able to apply learning and competencies that is obtained through existing markets and further utilize that knowledge into new markets (Lerøy Seafood Group, 2012).

> *"Lerøy har som ambisjon å være en ledende innovatør og kategoriutvikler på sjømat i de viktigste sjømatmarkedene i verden. Det vi lærer i noen markeder skal overføres til andre markeder. Vi skal være en kompetansebedrift som hjelper våre kunder med å utvikle sjømatkategorien i eget marked." (Lerøy Seafood Group, 2012, p. 9)*

The strategies employed by being a first-mover in addition to their ambitions to innovate, is therefore meant to define Lerøy's prospective orientation (Miles et al., 1978; Snow et al., 2011), and could be further exemplified through their statement below.

> *"I fremtiden vil fokus på innovasjon, effektivisering, teknologiutvikling, automatisering, produksjon og salg av høykvalitetsprodukter være avgjørende for vår konkurransekraft og fremtidige vekst." (Lerøy Seafood Group, 2015, p. 11)*

Year	*1st order concepts: Statement in annual report*	*2nd order themes: Research terminology*	*Aggregate dimensions*
2011	*"Konsernet er svært markedsrettet i sitt arbeid. Ved aktivt å utvikle nye markeder og nye produkter fra fiskeri og havbruk tuftet på bærekraftige prinsipper, vil konsernet utvikle lønnsomme, effektive og bindende samarbeid på tilførsels- og markedsføringssiden både nasjonalt og internasjonalt. Sjømatmarkedet har stadig økende." (p 11)*	***Prospector***	
	"Styret understreker behovet for strategisk fremtidsrettede modeller for konsernets aktiviteter, som kan innebære oppkjøp og fusjoner både oppstrøms og nedstrøms." (p 35)		
2012	*"Lerøy har som ambisjon å være en ledende innovatør og kategoriutvikler på sjømat i de viktigste sjømatmarkedene i verden. Det vi lærer i noen markeder skal overføres til andre markeder. Vi skal være en kompetansebedrift som hjelper våre kunder med å utvikle sjømatkategorien i eget marked." (p 9)*	***Prospector***	***Strategic typology***
	"Konsernet er svært markedsrettet i sitt arbeid. Ved aktivt å utvikle nye markeder og nye produkter fra fiskeri og havbruk tuftet på bærekraftige prinsipper, vil konsernet utvikle lønnsomme, effektive og bindende samarbeid på tilførsels- og markedsføringssiden både nasjonalt og internasjonalt. Sjømatmarkedet har stadig økende." (p 11)		
	"Helt sentralt i Lerøy Seafood Groups sin vekststrategi er å tilby nye produkter til både eksisterende og nye markeder." (p 13)		
	"Konsernet er svært markedsrettet i sitt arbeid. Ved aktivt å utvikle nye markeder og nye produkter fra fiskeri og havbruk tuftet på bærekraftige prinsipper, vil konsernet utvikle lønnsomme, effektive og bindende samarbeid på tilførsels- og markedsføringssiden både nasjonalt og internasjonalt. Sjømatmarkedet har stadig økende." (p 11)		
	"Veksten til Lerøy Seafood Group setter stadig større krav til forretningssystemer, risikostyring og kapital. Konsernet har et kontinuerlig fokus på å utvikle forretningssystemer som kan vokse med selskapet og som skaper konkurransefortrinn i markedet. [...] Konsernets kjernevirksomhet krever også ulike former for kompetanse og stor grad av endringsvilje." (p 12)		
2014	*"Lerøy Seafood Groups historiske vekst har vært tuftet på god drift, oppkjøp, videreutvikling av oppkjøpte selskaper og alliansebygging. Styret og administrasjonen jobber kontinuerlig med strategisk fremtidsrettede modeller for konsernets aktiviteter. Disse vil også i fremtiden innebære oppkjøp og fusjoner både oppstrøms og nedstrøms." (p 11)*		
	"Helt sentralt i Lerøy Seafood Groups vekststrategi er å tilby nye produkter til nye markeder. For å kunne gjøre dette må man kjenne, og være nær, kunden og markedet." (p 17)		
2015	*"Hovedfokus har alltid vært på utvikling av markeder for sjømat, og svært ofte har konsernet vært først ute i nye markeder, eller først ute med å kommersialisere nye fiskearter. Det er et viktig mål for konsernet å være en innovatør innen sjømat, gjerne i samarbeid med sluttkunden. Dette gjelder ikke bare innenfor produktutvikling, men også på områder som utvikling av effektiv logistikk og distribusjon. Pionerånden er fortsatt høyst levende i konsernet. Sjømatkonsernet Lerøy Seafood Group er ved inngangen til 2016 godt posisjonert for videre vekst og utvikling." (p 5)*		
	"I fremtiden vil fokus på innovasjon, effektivisering,teknologiutvikling, automatisering, produksjon og salg av høykvalitetsprodukter være avgjørende for vår konkurransekraft og fremtidige vekst." (p 11)		

2016	*"Lerøy Seafood Group søkte i 2016 om utviklingskonsesjoner til konseptet «Pipefarm», et lukket, flytende lengdestrømsanlegg. Konsernet mener at konseptet kan utvikles til en optimal løsning for lukket produksjon i sjø og på sikt bidra til å skape en mer arealeffektiv havbruksnæring. Søknaden gjelder totalt ni FoU-tillatelser og en samlet kapasitet på 7 020 tonn." (p 7)*		
	"Vi har sterk tro på at vi skal klare å videreutvikle våre VAP-selskaper i tiden fremover. Det skal vi gjøre ved å fokusere på produkt- og markedsutvikling samt på produksjonseffektiviserende tiltak i alle enheter. Vi ser store muligheter i økt teknologiutvikling og automatisering i tiden som kommer. Dette vil bidra til større konkurransekraft for våre markedsnære produksjonsenheter." (p 13)		
2016	*"Lerøy gjennomfører løpende en rekke større og mindre FoU-prosjekter med fokus på bedre driftsrutiner, bedre fiskevelferd samt bedre overlevelse og produksjonsoptimalisering. Dette er viktige prosjekter som griper direkte inn i vår daglige produksjon, og som raskt bidrar til resultater og forbedringer. Teknologiutvikling og metodeutvikling basert på et samspill mellom teknologi og biologi er viktig for å optimalisere driften." (p 53)*	***Defender***	

Table 25 - Analysis of findings- Strategic typology - Lerøy Seafood Group

Business model innovation

As previously made evident, Lerøy has upheld a prospective orientation throughout the research period (table 25). And as such, reflected growth and ambition to change. The organization has also explicitly stated how the company will transform the business, emphasized the need for more strategic forward-looking business models moving forward (Lerøy Seafood Group, 2011), and also how they hold the appropriate business models to take further strategic steps (Lerøy Seafood Group, 2013).

> *«Konsernet har over flere år gjort betydelige oppkjøp. Strategisk forretningsutvikling er avgjørende også i den videre utvikling av konsernet. Ovennevnte områder skal sikre best mulig utnyttelse av konsernets ressurser og optimal verdiskapning for selskapets aksjonærer, ansatte og dets samarbeidspartnere.» (Lerøy Seafood Group, 2011, p. 35)*

> *"Styret understreker behovet for strategisk fremtidsrettede modeller for konsernets aktiviteter, som kan innebære oppkjøp og fusjoner både oppstrøms og nedstrøms." (Lerøy Seafood Group, 2011, p. 35)*

> *"Jeg har store forventninger til at også 2014 kommer til å bli et strålende år! Vi har forretningsmodellen til å ta ytterligere steg."(Lerøy Seafood Group, 2013, p. 9)*

The empirical data also exemplifies how Lerøy acknowledge that to succeed with its ambition for future growth, the company must transform the core units of its business in accordance with innovation that will emerge through their value network.

> *"Veksten til Lerøy Seafood Group setter stadig større krav til forretningssystemer, risikostyring og kapital. Konsernet har et kontinuerlig fokus på å utvikle forretningssystemer som kan vokse med selskapet og som skaper konkurransefortrinn i markedet. [...] Konsernets kjernevirksomhet krever også ulike former for kompetanse og stor grad av endringsvilje." (Lerøy Seafood Group, 2012, p. 12)*

As previous findings show, Lerøy has taken several measures to change their organization and innovate their business model. Through the six years period, it is believed that the company has conducted three separate innovations to their business model. These are related to seafood production, service vessels and white fish. However, while some of these may be characterized as significant changes to Lerøy's corporate strategy, some may only reflect incremental innovations to their business model (Markides, 2006). First, in relation to Lerøy's growth and

development strategy, the company expanded into a new business segment. Through the acquisition of Norsk Oppdrettsservice AS, Lerøy entered into farming and production of lumpfish. The acquisition resulted in self-sustainability using lumpfish in sea lice treatment, and consequently utilized the firm's capacity to capture added value within the firm's total salmon production chain. This is construed as an innovative measure to the firm's "value creation mechanism" as it extends the firm's value network to include the service industry (Fjeldstad & Snow, 2017). The company's expansion into Lumpfish production is therefore believed to reflect an incremental change to their business model.

> *"I vår streben etter optimal miljømessig og økonomisk bærekraftig produksjon har vi gjort betydelige investeringer i produksjon av rensefisken rognkjeks. Vi kjøpte i 2014 34 % av Norsk Oppdrettsservice AS, som er ledende på produksjon av denne arten, og som har produksjonsanlegg både i Midt-Norge og Sør-Norge. I tillegg har vi bygget ut to egne anlegg for produksjon av Rognkjeks, samt at vi tidlig i 2015 kjøpt en produsent i Nord-Norge. Lerøy vil i fremtiden være selvforsynt med rognkjeks i alle regioner." (Lerøy Seafood Group, 2014, p. 9)*

As a second point, Lerøy expanded their value network through entering into a 50 per cent ownership agreement with Seistar Holding AS, related to service vessels (Lerøy Seafood Group, 2016). This acquisition points to an important measure in respect to the organizations strategic direction by developing the firm through both internal development and integration of acquired firms. The shipping unit added a new node to the service aspect of the value network, and consequently change the "value creation mechanism" of their business model. Therefore, it is interpreted to reflect an incremental business model innovation (Fjeldstad & Snow, 2017). In other words, because the service unit is intended to solely serve the Lerøy's value network, this is meant to differ from the shipping business unit that was founded by Marine Harvest, which was identified as a radical innovation to the company's business model.

> *"Lerøy Seafood Groups historiske vekst har vært tuftet på god drift, oppkjøp, videreutvikling av oppkjøpte selskaper og alliansebygging. Styret og administrasjonen jobber kontinuerlig med strategisk fremtidsrettede modeller for konsernets aktiviteter. Disse vil også i fremtiden innebære oppkjøp og fusjoner både oppstrøms og nedstrøms." (Lerøy Seafood Group, 2015, p. 13)*

As opposed to the two latter incremental innovations, in 2016 Lerøy also initiated the strategic decision to acquire Havfisk ASA and Norway Seafood Group. These companies are identified

as two major European players within fishing and processing of white fish. The decision clearly reflects the firm's strategic orientation of expanding beyond the company's current business segments.

> *"Med 100% eierandel i Havfisk ASA og Norway Seafoods Group AS har Lerøy Seafood Group startet en ny og spennende reise der hvitfisk skal integreres i konsernets veletablerte verdikjede. Dette gjør Lerøy Seafood Group til et helintegrert selskap med kontroll på hele verdikjeden for alt av sjømat fra hav til konsument." (Lerøy Seafood Group, 2016, p. 6)*

The acquisitions resulted in an increased product portfolio that further transformed Lerøy's value configuration logic. Correspondingly, the acquired companies made up the value chain related to the white fish segment. In addition, the companies were also believed to be inter-linked to Lerøy's value network (e.g. global sales and marketing unit). Based on these findings, the transformation is defined as a radical innovation to the firm's business model and is supposed to have innovated all four business model elements (Fjeldstad & Snow, 2017; Stabell & Fjeldstad, 1998). Through the introduction of a new business unit, this naturally developed a new customer segment, changing the "role of the customer". Likewise, the "value appropriation mechanism" was transformed to a new paying segment and due to the significant difference in red- and white fish, Lerøy's "value creation mechanism" changed. This is related to how the business operation also transformed and further supplemented the firms "value proposition" of delivering on an extended value promise to the costumer.

> *"Konsernets kjernevirksomhet krever ulike former for kompetanse og stor grad av endringsvilje. [...]. Veksten til Lerøy Seafood Group stiller stadig større krav til forretningssystemer, risikostyring og kapital. Konsernet har et kontinuerlig fokus på å utvikle forretningssystemer som kan vokse med selskapet, og som skaper konkurransefortrinn i markedet" (Lerøy Seafood Group, 2015, p. 13)*

> *"Konsernet skal gjennom sin aktivitet skape varige verdier. Det stilles derfor strenge krav til risikostyring og evne til langsiktighet i utviklingen av bærekraftige strategiske forretningsprosesser." (Lerøy Seafood Group, 2016, p. 77)*

> *"Konsernet har over flere år gjort betydelige oppkjøp. Strategisk forretningsutvikling er avgjørende også i den videre utvikling av konsernet. Ovennevnte områder skal sikre best*

mulig utnyttelse av konsernets ressurser og optimal verdiskapning for selskapets aksjonærer, ansatte og dets samarbeidspartnere. " (Lerøy Seafood Group, 2011, p. 35)

The upper echelons mental models

Lerøy has shown a strong focus on innovation to the organization and its business model. However, such measures for change do not occur by themselves, and is in need of solid decisions from the organization itself. Theory has shown how these strategic choices are taken by the firm's top management team, i.e. the strategic decision-makers of the firm (cf. Carpenter et al., 2004; Hambrick & Mason, 1984). Correspondingly, Lerøy's annual reports emphasize the need for organizational change and more strategic, forward-looking and sustainable business models. This, in order to succeed in the marketplace (cf. Lerøy Seafood Group, 2011; Lerøy Seafood Group, 2012). The empirical findings therefore demonstrate how what has been stated in the company's annual reports over the six-year period, is also evidently reflected through the organizations actions. More specifically, it seems to be a strong correlation between the semantics in the corporate annual reports communicated by the top manager's and the company's strategic actions.

"Styret understreker behovet for strategisk fremtidsrettede modeller for konsernets aktiviteter, som kan innebære oppkjøp og fusjoner både oppstrøms og nedstrøms." (Lerøy Seafood Group, 2011, p. 35)

"Jeg har store forventninger til at også 2014 kommer til å bli et strålende år! Vi har forretningsmodellen til å ta ytterligere steg." (Lerøy Seafood Group, 2013, p. 9)

Looking further at the decision-makers of Lerøy it might be argued how the company's board members may potentially have influenced their investment into aquaculture-service vessels. These could be exemplified through how the largest shareholder of Lerøy, Møgster Group (besides their ownership in Austevoll Seafood), is the largest owner of the offshore service vessel company, DOF Group. As such, Arne Møgster and Marianne Møgster hold antecedents from the offshore service industry. Furthermore, Lerøy's investment into the white fish segment is could further indicate influence from the largest shareholders antecedents. This, through their background from Austevoll Seafood that specializes on fishery of pelagic and white fish, similar to the operations of Havfisk ASA that was acquired by Lerøy. Based on thus, it might be reflected upon whether Lerøy's strategic initiative to invest and expand their business model into service vessels, was influenced by the mental model of their largest shareholder.

Furthermore, Lerøy's prospective orientation could be exemplified through their large investments in acquiring Havfisk ASA and Norway Seafood Group. This clearly demonstrate the company's aim for future growth. The volatile salmon prices, combined with Lerøy's struggle to increase their production volume and increased OPEX (Lerøy Seafood Group, 2016; PwC, 2017c), provided a threat to the company's cash flow. Consequently, Lerøy's decision to invest in two large acquisitions is intended to be an action that would help the company re-gain their reference point (i.e. intended to control the cash flow). By elaborating further on this, it might indicate how the risk-seeking action from the top management team, may confirm their behavior relative to prospect theory (Kahneman & Tversky, 1979). These findings are also meant to be in line with recent studies on change and organizational behavior when exposed with environmental threats and is also found to be compliant with previous research (cf. Chattopadhyay et al., 2001; Saebi et al., 2017).

5.1.3 SalMar

Value configuration

Findings seem to indicate how the organizational design of SalMar is structured as a value chain configuration, with aspects that reflect a value access logic (i.e contract manufacturing). The latter being SalMar's secondary processing unit (Plambeck & Taylor, 2005; M. E. Porter, 1985; Stabell & Fjeldstad, 1998). SalMar has shown to transform the strategic direction of the firm's value configuration using their InnovaMar plant. In 2007, SalMar took the strategic decision to sanction the building of the processing plant with the intent of holding enough capacity to serve SalMar's own production volume, while at the same time being able to capitalize on external salmon-producers.

> *"At SalMar we control the entire value chain, from selectively bred broodfish, via fry, smolt and full-grown fish to harvesting, secondary processing and sales." (SalMar, 2012, p. 8)*

In 2011, SalMar established an alliance with the fully integrated salmon producer, Bakkafrost. The agreement benefited SalMar through initiatives such as the lease of service vessels at reduced prices and the ability to purchase salmon feed directly from Bakkafrost's feed factory. As one of Bakkafrost's major shareholders, SalMar holds a 24.8 per cent ownership in Bakkafrost (SalMar, 2011). The alliance is interpreted as merely a favorable purchase agreement for both parties rather than trying to establish a value network. Because of this, the alliance is

believed to not change the company's value configuration. Similarly, in 2012 SalMar established an alliance with Lerøy Seafood Group (table 26). The alliance allowed the companies to benefit from each other's production plants, explicitly Lerøy's production plant in Senja and InnovaMar. Although both of these alliances, Bakkafrost and Lerøy Seafood Group, may be perceived as a network configuration due to how these companies links each other's services (Fjeldstad & Snow, 2017). It is not considered to change their value configuration. This is demonstrated through considering the alliances in the context of SalMar's value chain configuration, the cooperation between the two parties may be argued to solely be an intent reduce operational costs as well as capitalize on both harvesting and secondary processing from the InnovaMar plant.

> *"Collaboration with other companies in the areas of harvesting and secondary processing gave good results through the year and increased capacity utilisation at the InnovaMar plant." (SalMar, 2012, p. 8)*

On the other hand, SalMar's strategic decision to create an alliance with Lerøy Seafood Group, created further initiatives to capitalize on services that the InnovaMar plant offered. This was found to be in accordance with, SalMar's strategic decision from 2007. Back in 2007, the company planned to make use of the potential free capacity in the facility. SalMar, was at this time structured as a classical value chain, but through the available capacity in the plant it enabled SalMar to make use of the available asset in the secondary processing part of its value chain (Fjeldstad & Snow, 2017; Plambeck & Taylor, 2005; Stabell & Fjeldstad, 1998). The organizations ability to provide services to external salmon producers is therefore interpreted as a contract manufacturing component (Plambeck & Taylor, 2005), this by using available capacity to generate revenues. Reflecting back at the previous analysis, this is interpreted to be analogue to Marine Harvest's Morpol unit, and the typical business model used in shipping (Lorange & Fjeldstad, 2012) that was previously elaborated in more detail in sub-chapter 5.1.1.

Year	*1st order concepts: Statement in annual report*	*2nd order themes: Research terminology*	*Aggregate dimensions*
2011	*"SalMar believes the Faeroes offer good conditions for farming of Atlantic salmon, and it sees opportunities for partnership between SalMar and Bakkafrost. In 2011 a collaboration was established with respect to the use of well-boats and the purchase of feed from Bakkafrost's feed factory, Havsbrun." (p 37)*	***Value network***	***Value configuration***
2012	*"Harvesting and processing agreement with Lerøy. In February 2012 SalMar entered into an industrial collaboration with the listed company Lerøy Seafood Group ASA (Lerøy)." (p 42)*		
	"Collaboration with other companies in the areas of harvesting and secondary processing gave good results through the year and increased capacity utilisation at the InnovaMar plant." (p 8)		
2013	*"But I believe there is light to be seen on the horison. The acquaculture industry has a long history of close collaboration with the research and development sector. SalMar is working on several projects – both large and small scale – to improve our productivity while helping to solve some of the challenges facing the industry as a whole." (p 8)*		
	"We are also very pleased to be working in close cooperation with leading centres for maritime technology, in particular Kongsberggruppen, which are supporting us in the implementation and application of new, ground-breaking technology for open-ocean fish farming. Passion for Salmon «Passion for Salmon» is our vision." (p 11)		
2011	*"SalMar invests considerable resources to be at the forefront in the development of "best practices" and new environment-friendly solutions in all parts of the value chain." (p 41)*	***Value chain***	
2012	*"At SalMar we control the entire value chain, from selectively bred broodfish, via fry, smolt and full-grown fish to harvesting, secondary processing and sales. We know that every single process is critical to a good outcome, and we know that we will always have considerable potential for improvement in all areas. For this reason, we are also working strenuously every." (p 8)*		
2015	*"Salmar has initiated major investments to increase smolt capacity, so that we can achieve self-sufficiency in smolt." (p 8)*		

Table 26 - Analysis of findings - Value configuration - SalMar

Strategic typology

Through the six-year period, SalMar's strategic objective has been to become the most cost-effective producer of farmed salmon (SalMar, 2016). SalMar owns and operates the world's most innovative secondary-processing plant and has shown to be advanced in respect to the use of technology and new technological solutions through their modernized operations and the company's initiatives of increased operational efficiency (table 27).

> *"SalMar's vision is now quite simply to be the lowest-cost supplier of farmed salmon, which implies that the company will always be the most cost effective producer of salmon." (SalMar, 2011, p. 11)*

In addition to the company's high focus on reducing production cost and enhanced effectiveness within its operations, SalMar has responded to the environmental challenges (e.g. increased OPEX, volatile prices, biological issues and climate change) by investing in new and innovative technological solutions among others. Nonetheless, their strategies are intended to reflect a defensive orientation (Snow et al., 2011; Miles et al., 1978), which will be further elaborated and exemplified below.

> *"In 2017 our firm target is to reverse the rise in production cost." (SalMar, 2016, p. 9)*

In 2011, SalMar entered an alliance with the salmon producer Bakkafrost. This enabled the company to reduce production cost, as well as increase their overall efficiency through profiting from the firm's shipping unit. This was based on an overall use of wells- and service vessels (table 27). Later in 2013, SalMar initiated an open innovation initiative and entered into a collaboration with the oilfield service company Global Maritime (Chesbrough, 2003). The technological cooperation was structured around the development of SalMar's Ocean farming concept (SalMar, 2013), where Global Maritime had the responsibility for the design and construction of the farming unit (SalMar, 2013).

> *"Through the development and realisation of new technology, and through the acquisition of operational experience, Ocean Farming will possess the particular competence needed by the next generation of fish farming." (SalMar, 2014, p. 14)*

> *"The offshore fish farm underlies SalMar's ambition and determination to be a technology leader in the field of sustainable seafood production." (SalMar, 2015, p. 8)*

Overall, through the Ocean Farming concept and InnovaMar plant, SalMar has demonstrated a significant focus on investments to automate and remotely operate the company's operations. These investments may be perceived as innovative and imply a potential for the firm to further develop into a digital business (SalMar, 2014). However, irrespective of the SalMar's increased attention to technological innovation and application of new solutions, these strategies are meant to primarily consider a purpose, namely to enhance operational performance, reduce operational expenditures and enhance overall cost-effectiveness. On this basis, SalMar's strategies and cost-awareness is believed to underpin the company's investment-decisions in new technology (Miles et al., 1978), and thus continuously show their defensive orientation. Nevertheless, it is worth mentioning how SalMar's Ocean farming concept may hold potential technological benefits that could help tackle some of the operational challenges within the marketplace (PwC, 2017c).

> *"In the long haul, it will be those companies which through dedication and sound decisions, best use the good times to position themselves for the future, that will emerge as winners. This is fundamental in SalMar's thinking, management and positioning. The solutions to the challenges confronting the industrys will increasingly prove difficult to find in the traditional toolbox that the industry has used until now. The aquaculture sector has arrived at a point where the application of innovation and out-of-the-box thinking is a condition for further development and growth. Crucial to the success of such innovation is the ability to connect the knowledge and experience we have today with new technologies and production patterns in a way that they together, can shape tomorrow's fish farming industry." (SalMar, 2016, p. 10).*

Year	*1st order concepts: Statement in annual report*	*2nd order themes: Research terminology*	*Aggregate dimensions*
2011	*"In 2011 the values and the SalMar School have been revitalised, in keeping with other changes in the group and the industry as a whole. SalMar's vision is now quite simply to be the lowest-cost supplier of farmed salmon, which implies that the company will always be the most cost effective producer of salmon. This is something SalMar has often been, but not always. For this reason the SalMar School and the cultural tenets have become more important than ever in our efforts to retain our position as the world's most cost-effective salmon producer" (p 11)*	***Defender***	***Strategic typology***
	"SalMar focuses strongly on the development of scientific, technical and process competence in all its business areas. The SalMar School collects, develops and disseminates knowledge and "best practices" throughout the organisation. At the same time, management at each business area is responsible for identifying and implementing projects and initiatives which can help to expand the Group's overall competence as well as strengthen the technical and practical solutions used at the new InnovaMar facility, among others" (p 40)		
2012	*"We at SalMar have a clear and extremely ambitious goal: to be the world's most cost-effective producer of farmed salmon" (p 8)*		
2013	*"Although SalMar continues to persue its stated aim of cost leadership, it is moving from a focus on outcomes to a focus on performance. We aim for excellence at all levels and at all aspects of our operation" (p 20)*		
2014	*"The strategy builds on SalMar's already strong performance culture, which will be further reinforced. Initiatives will focus primarily on optimising the company's core business operations. SalMar has experienced substantial growth in recent years, and strategic priority has been given to measures that will enable us to resolve the challenges arising out of rapid expansion" (p 43)*		
2015	*"For our operative units, we have two simple but clear objectives; 1) Maximum operational efficiency for biological production at a minimum cost; 2) The best possible sales price for our salmon, and optimal resource utilisation" (p 9)*		
2016	*"In 2017 our firm target is to reverse the rise in production cost" (p 9)*		
2012	*"We already have the world's largest and most innovative salmon processing plant, and we work closely with key R&D environments to participate in the ongoing development of new and forward-looking technologies" (p 9)*	***Analyser***	
	"In our view, therefore, there is considerable growth potential in both established and new markets, as a result partly of changing consumer trends and partly of a rapidly growing, more affluent middle class. As a producer of first-class Atlantic salmon, SalMar fits perfectly into this scenario. We are therefore continuing to work in accordance with our tenet" (p 9)		
2013	*"The new design combines the best of existing technology and solutions from the Norwegian fish farming industry and the offshore oil and gas sector [...]. The project is based on proven technology composed for optimal fish farming. [...] The facility is fully automated, avoiding heavier manual operations. During normal operations, a crew of 2-4 people will monitor and manage the facility. However, it can also be remotely operated" (p 14)*		
	"Although SalMar continues to peruse its stated aim of cost leadership, it is moving from a focus on outcomes to a focus on performance. We aim for excellence at all levels and at all aspects of our operation" (p 20)		
2014	*"Through the development and realisation of new technology, and through the acquisition of operational experience, Ocean Farming will possess the particular competence needed by the next generation of fish farming." (p 14)*		

2015	*"The offshore fish farm underlies SalMar's ambition and determination to be a technology leader in the field of sustainable seafood production" (p 8)*		
2016	*"We are also very pleased to be working in close cooperation with leading centres for maritime technology, in particular Kongsberggruppen, which are supporting us in the implementation and application of new, ground-breaking technology for open-ocean fish farming. Passion for Salmon «Passion for Salmon» is our vision" (p 11)*		
	"In the long haul, it will be those companies which through dedication and sound decisions, best use the good times to position themselves for the future, that will emerge as winners. This is fundamental in SalMar's thinking, management and positioning. The solutions to the challenges confronting the industrys will increasingly prove difficult to find in the traditional toolbox that the industry has used until now. The aquaculture sector has arrived at a point where the application of innovation and out-of-the-box thinking is a condition for further development and growth. Crucial to the success of such innovation is the ability to connect the knowledge and experience we have today with new technologies and production patterns in a way that they together, can shape tomorrow's fish farming industry" (p 10)		
	"In the long haul, it will be those companies which through dedication and sound decisions, best use the good times to position themselves for the future, that will emerge as winners. This is fundamental in SalMar's thinking, management and positioning" - Trond Williksen, President & CEO (p 9)		

Table 27 - Analysis of findings – Strategic typology - SalMar

Business model innovation

As previously demonstrated, in line with SalMar's strategic objective and ambition of becoming the most cost-effective producer of farmed salmon (e.g. SalMar, 2012; SalMar, 2016), the company has also explicitly stated how they will continuously pursue new and improved business models (SalMar, 2011), as exemplified below.

> *"We in SalMar have always had an absolute focus on sustainability regarding our operations. This commits to strong biological control, constantly seeking new and better business models, and a strong ecological focus are just some of the areas we are working with to ensure sustainability in everything we do." (SalMar, 2011, p. 107)*

> *"Crucial to success of such innovation is the ability to connect the knowledge and experience we have today with new technologies and production patterns."* (SalMar, 2016, p. 10)

It has also become evident how SalMar has employed several strategies to frequently improve and streamline its operations through the external market shifts. This includes alliances with partners and competitors as well as technology development and improved operational effectiveness. In 2012, the company entered an alliance with Lerøy Seafood Group. The alliance allowed Lerøy to make use of the free capacity available at SalMar's InnovaMar plant. This meant that the firm could further capitalize on the services and available capacity that the plant offered. Despite this the growth of SalMar's revenues that is related to salmon processing. This is interpreted to not be defined as a radical change to the firm's value configuration nor an innovation to their business model within the research period of this study. The reason for this is based on when the innovation took place. The InnovaMar plant was sanctioned in 2007, and thus it is argued that the innovation took place at the time of the decision in 2007, and not when InnovaMar was opened in 2011.

> *"Collaboration with other companies in the areas of harvesting and secondary processing gave good results through the year and increased capacity utilisation at the InnovaMar plant." (SalMar, 2012, p. 8)*

The upper echelons mental models

The empirical findings show how SalMar's defensive orientation is not only reflected in the company's semantics, but also characterized in their actions up until 2016. SalMar clearly describe that for the company to survive in the industry, the firm must be dedicated to cost-

control and operational effectiveness. The organization further emphasize how this requires them to stay at the forefront of technology and innovative solutions as well as reinvent operational conduct accordingly (SalMar, 2011). The firm's commitment to continuously adapt and pursue new and better business models, is also intended to be in line with the market challenges such as climate change, volatile salmon prices and biological problems (PwC, 2017c; SalMar, 2011).

> *"In the long haul, it will be those companies which through dedication and sound decisions, best use the good times to position themselves for the future, that will emerge as winners. This is fundamental in SalMar's thinking, management and positioning." - Trond Williksen, President & CEO (SalMar, 2016, p. 9)*

As initially stated, it has become evident how SalMar's actions have not performed in accordance with the semantics in their annual reports. This could be exemplified through how SalMar has conducted minor initiatives to innovate their business model thought out the empirical findings. As opposed to their lack of commitment that has been clearly evident through the findings, one of their proactive statements could be exemplified below.

> *". . . constantly seek new and better business models." (SalMar, 2011, p. 107)*

Reflecting further on this, it could be argued how the top manager's might be influenced by heuristics and cognitive biases that limits the firm's ability to innovate their business model (Das & Teng, 1999; Kruger & Dunning, 1999; Tversky, 1995; Tversky & Kahneman, 1974). More specifically, SalMar's management team may have described changes to their business models, without recognizing the intra-organizational cognitive barriers (Aspara et al., 2013; Chesbrough, 2010) or the actual meaning of the term (von den Eichen et al., 2015). Another potential cause, could be how these senior managers are overconfident in the organization's ability to perform radical changes and therefore may refer to seeking new and better business models as a simple task for the company (Saebi, 2016). This could reflect the top managers biased viewpoint related to organizational change, i.e. not fully recognizing the complexity and the effect it will have on the organization (Dunning, 2011; Kruger & Dunning, 1999; von den Eichen et al., 2015).

> *"The solutions to the challenges confronting the industrys will increasingly prove difficult to find in the traditional toolbox that the industry has used until now. The aquaculture sector has arrived at a point where the application of innovation and out-of-the-box thinking is a condition for further development and growth. Crucial to the success of such innovation is the ability to connect the knowledge and experience we*

have today with new technologies and production patterns in a way that they together, can shape tomorrow's fish farming industry." (SalMar, 2016, p. 10)

Furthermore, it is shown how SalMar's strategic decisions-makers, (i.e. the top management), and their interpretation of the external shifts, influence their future conducts and continuous effectiveness (Chattopadhyay et al., 2001; Hambrick & Mason, 1984). Studies has shown how the volatile salmon prices and increased operational costs has developed an uncertain market environment for salmon producers (PwC, 2017c). As such, it might be argued that such threatening market conditions with high levels of uncertainty has been difficult to relate to for the senior management team (Staw et al., 1981). In relation to SalMar, the company has taken actions that could be interpreted as fear of losing control of the situation, i.e. volatile and uncertain environment (Richter, 2008). Stated differently, the firm's action is believed to be anchored in the managerial cognition, for which the managements behavior is a result of an increased attention to reduced cost and increased efficiency (Tversky & Kahneman, 1974). SalMar's defensive orientation and high focus on cost-effectiveness, i.e. defensive orientation, might seem to be consistent with threat-rigidity theory (cf. Ocasio, 1995; Staw et al., 1981). This is an interesting finding, and unlike recent research on Norwegian companies (cf. Saebi et al., 2017), were able to confirm threat-rigidity theory relative to firms behavior, once exposed to threatening conditions.

"In the long haul, it will be those companies which through dedication and sound decisions, best use the good times to position themselves for the future, that will emerge as winners." (SalMar, 2016, p. 9)

As a last reflection on the company's strategic decision-makers of the firm, the empirical data shows how the company has changed CEO's two times during the six-year period (2011-2016). What is more, the data found how these CEO's hold antecedents and experience from the aquaculture industry (table 20). In view of this, it might be reflected upon whether the CEO's antecedence and mental models that may affect their perception of business model innovation (Reger & Palmer, 1996). If this were to be the case, the empirical data of the CEO's demographic characters would be able to partly explain how SalMar has remained defensive throughout the study period (Carpenter et al., 2004; Hambrick & Mason, 1984). Also, related to theory it might be argued how the top managers have been anchored in SalMar's classical value chain configuration (Fjeldstad & Snow, 2017), which is well-known within the aquaculture industry.

As such, it might seem that the top management team have been blinded by the firm's dominant logic (Prahalad, 2004).

5.1.4 Grieg Seafood

Value configuration

In 2011, Grieg Seafood (hereafter GSF) invested in smolt production facilities at all four regions. The investment into the upstream unit, resulted in an expansion of the organizations value chain.

> *"A major programme of investment in smolt production in all four regions aimed at reducing future production costs." (Grieg Seafood, 2011, p. 2)*

GSF has developed their business through organic development as well as investment into their upstream unit. Nonetheless, this has not demonstrated any changes to their traditional value chain configuration throughout the study period (table 28).

Strategic typology

Through the six-year period, GSF has demonstrated how they aim to grow organically through the use of existing licenses and available production capacity, whilst focusing on domestic and existing markets (Grieg Seafood, 2014). This is considered to give the firm a greater predictability, product portfolio and better control of future expansions. These strategies are supposed to demonstrate the firm's defensive orientation (Snow et al., 2011).

> *"Grieg Seafood har fortsatt et større utnyttet volumpotensial på eksisterende lisenser. Fokus vil fremover være på ytterligere å ta ut det potensialet som finnes i Norge, både produksjonsmessig og kostnadsmessig." (Grieg Seafood, 2012, p. 17)*

Through their annual reports, GSF has given an impression of a prospective orientation (table 29). As exemplified below, the company has expressed their commitment to change and ambition to become an industry leader.

> *"The Group shall be a leader in the area of aquaculture." (Grieg Seafood, 2011, p. 2)*

Yet, as opposed to their statements, the empirical data has shown how GSF have struggled to execute and internally drive their innovations (Miles et al., 1978). An example is shown in GSF's problems to utilize maximum capacity in salmon production within their existing licenses and regions (Grieg Seafood, 2015). Consistent with their defensive orientation, the company has

taken measures to handle this administrative problems (Miles et al., 1978). To transform into a functional structure, i.e. stabilizing management system, the firm centralized its production and sales unit. This with the intent of becoming more flexible and to generate and maintain operational efficiency (Grieg Seafood, 2013).

> *"Vi endrer vår organisasjonsmodell for å få sterkere fokus og bedre vår evne til å ta ut synergier og erfaringsoverføring mellom enhetene innenfor både oppdrett og salg. Vi er godt i gang med integreringen av salget fra vår skotske virksomhet i Ocean Quality og vil fortsette med salget i Nord- Amerika. Alt salg vil dermed etter hvert gå igjennom en felles global salgsorganisasjon noe som vil gjøre oss enda bedre og mer komplett som leverandør. Tilsvarende styrkes organisasjonen innen oppdrett med ansettelsen av en egen oppdrettsansvarlig på konsernnivå. Dette skal bedre vår evne til erfaringsoverføring og synergiuthenting på tvers av oppdrettsregionene og er et viktig element i driftsmessig forbedring og optimalisering." (Grieg Seafood, 2013, p. 4)*

Year	*1st order concepts: Statement in annual report*	*2nd order themes: Research terminology*	*Aggregate dimensions*
2011	*"A major programme of investment in smolt production in all four regions aimed at reducing future production costs." (p 2)*	***Value chain***	***Value configuration***
2013	*"Vi endrer vår organisasjonsmodell for å få sterkere fokus og bedre vår evne til å ta ut synergier og erfaringsoverføring mellom enhetene innenfor både oppdrett og salg. Vi er godt i gang med integreringen av salget fra vår skotske virksomhet i Ocean Quality og vil fortsette med salget i Nord-Amerika. Alt salg vil dermed etter hvert gå igjennom en felles global salgsorganisasjon noe som vil gjøre oss enda bedre og mer komplett som leverandør. Tilsvarende styrkes organisasjonen innen oppdrett med ansettelsen av en egen oppdrettsansvarlig på konsernnivå. Dette skal bedre vår evne til erfaringsoverføring og synergiuthenting på tvers av oppdrettsregionene og er et viktig element i driftsmessig forbedring og optimalisering" (p 4)*		
2014	*"Ocean Quality utvider sin virksomhet til også å gjelde salg av Grieg Seafood sin fisk i BC. Dette er iverksatt fra og med 2015. Ocean Quality North America Inc. er eid 100% av Ocean Quality AS. Den biologiske situasjonen var vært god i starten av 2015" (p 15)*		

Table 28 - Analysis of findings – Value configuration - Grieg Seafood

Year	*1st order concepts: Statement in annual report*	*2nd order themes: Research terminology*	*Aggregate dimensions*
2011	*"The Group shall be a leader in the area of aquaculture." (p 2)*	***Prospector***	
2016	*"Organisasjonen har stått samlet i alle ledd, og våre medarbeidere har «gitt alt» for å virkeliggjøre visjonen om å oppnå perfeksjon som ett konsern. I løpet av året har vi med god støtte fra styret tatt viktige grep internt i konsernet. Under slagordet «time to step up» har vi igangsatt programmer som har mobilisert talent og motivasjon for å bli den beste aktøren i våre områder." (p 3)*		
	"Grieg Seafood har satt seg et mål om å bli den beste leverandøren av sunn og næringsrik mat.'' (p 3)		
2013	*"Vi endrer vår organisasjonsmodell for å få sterkere fokus og bedre vår evne til å ta ut synergier og erfaringsoverføring mellom enhetene innenfor både oppdrett og salg. Vi er godt i gang med integreringen av salget fra vår skotske virksomhet i Ocean Quality og vil fortsette med salget i Nord-Amerika. Alt salg vil dermed etter hvert gå igjennom en felles global salgsorganisasjon noe som vil gjøre oss enda bedre og mer komplett som leverandør. Tilsvarende styrkes organisasjonen innen oppdrett med ansettelsen av en egen oppdrettsansvarlig på konsernnivå. Dette skal bedre vår evne til erfaringsoverføring og synergiuthenting på tvers av oppdrettsregionene og er et viktig element i driftsmessig forbedring og optimalisering." (p 4)*		
2011	*"Grieg Seafood har fortsatt et større uutnyttet volumpotensial på eksisterende lisenser. Fokus vil fremover være på ytterligere å ta ut det potensialet som finnes i Norge, både produksjonsmessig og kostnadsmessig." (p 17)*	***Defender***	
	"A major programme of investment in smolt production in all four regions aimed at reducing future production costs." (p 2)		

2012	*"Grieg Seafood har fortsatt et større uutnyttet volumpotensial på eksisterende lisenser. Fokus vil fremover være på ytterligere å ta ut det potensialet som finnes i Norge, både produksjonsmessig og kostnadsmessig." (p 17)*		
2014	*"Grieg Seafoods viktigste mål er å forbedre konsesjonsutnyttelse, samt redusere kostnader gjennom kontinuerlig forbedring av de biologiske prestasjoner. Det arbeides kontinuerlig med forbedringer av interne rutiner og opplæring av ansatte. Hovedfokus fremover er fortsatt å øke produksjonen på eksisterende lisenser i Norge, i tillegg til å fullføre snuoperasjonene på Shetland og BC." (p 16)*		
2015	*"Blant utfordringene vil jeg nevne konsesjons- og kapasitetsutnyttelsen, som fremdeles er for lav i forhold til praktisk kapasitet i konsernet. Administrasjonen jobber med å øke utnyttelsen, spesielt ved våre norske lokaliteter, som har størst potensial i dagens marked. Økt kapasitetsutnyttelse vil bidra til kostnadsbesparelser." (p 3)*		

Table 29 - Analysis of findings – Strategic typology - Grieg Seafood

Business model innovation

In 2011, GSF invested significantly in their operation and developed independent smolt production facilities in all the company's four regions. The expansion is supposed to have influenced the organizations "value creation mechanism" as the larger smolt facilities are intended to enhance the firm's economies of scale. This can be explained through how the increased production volume will decrease the overall price per smolt (Fjeldstad & Snow, 2017). The investment also allowed the firm to breed their own smolt as opposed to purchasing from external vendors. Based on this, the investment is evidently defined as an incremental innovation to the company's business model.

In 2013 the company transformed two value chain components, more specifically production and their sales and marketing unit. This was a result of GSF's consolidation of its organizational structure (Grieg Seafood, 2013). Merging the company's sales unit constituted an improvement of their position within sales and marketing. As the same time, the centralization within the production management was shown to increase synergies and its operational performance. These characteristics are supposed to have amounted for change for the business model, through the "value creation mechanism" element.

> *"Vi endrer vår organisasjonsmodell for å få sterkere fokus og bedre vår evne til å ta ut synergier og erfaringsoverføring mellom enhetene innenfor både oppdrett og salg. Vi er godt i gang med integreringen av salget fra vår skotske virksomhet i Ocean Quality og vil fortsette med salget i Nord- Amerika. Alt salg vil dermed etter hvert gå igjennom en felles global salgsorganisasjon noe som vil gjøre oss enda bedre og mer komplett som leverandør. Tilsvarende styrkes organisasjonen innen oppdrett med ansettelsen av en egen oppdrettsansvarlig på konsernnivå. Dette skal bedre vår evne til erfaringsoverføring og synergiuthenting på tvers av oppdrettsregionene og er et viktig element i driftsmessig forbedring og optimalisering" (Grieg Seafood, 2013, p. 4)*

Accordingly, Grieg Seafood has taken measures to implement digital technologies that would allow for augmented synergies and benchmarking across the company's global locations (Grieg Seafood, 2014).

> *"2015 skal bli et godt år for Grieg Seafood. Vi skal fullføre en rekke igangværende prosjekter, blant annet en ny IT-plattform for å øke samhandlingen mellom lokaliteter, selskaper og regioner, skape grunnlag for benchmarking av våre resultater og vise fram*

det beste ved vår virksomhet. Vi skal også optimalisere forholdet mellom produksjon av settefisk og fisk i sjø, noe som vil føre til at alle regioner oppnår en tilstrekkelig smoltforsyningsgrad. Vi skal ta i bruk ny teknologi og nye sjølokaliteter, og vi skal oppgradere kapasiteten med fire nye konsesjoner i Finnmark, samt en ny lokalitet i Skottland. Med etableringen av Ocean Quality i det amerikanske markedet fra og med 2015 dekker salgsselskapet nå alle våre fire regioner." (Grieg Seafood, 2014, p. 4)

Still, the empirical findings seem to show that GSF's investment in technological solutions is implemented for simply improving and centralizing the control of their global operations. For this reason, the company is not intended to have implied an innovation to their business model (Markides, 2006).

The upper echelons mental models

The supplementary data shows how during the six-year period Grieg Seafood has changed chief executive officer at two occasions (table 20). This shift occurred in 2014 and 2015, and based on empirical finding, does not seem to have affected the strategic orientation of the company. It is however noted how the CEO's hold past-experience from the aquaculture industry. This might suggest how their dominant logic is anchored in a classical chain configuration, well-known within the aquaculture sector. Consistent with proceeding research, it might thus be argued how top managers antecedents might affect present actions (Carpenter et al., 2004; Das & Teng, 1999; Narayanan et al., 2011)

Since 2011 GSF held a strategic objective of becoming an industry leader within the field of salmon and expressed a willingness to change. This is believed to identify a prospective orientation. Nevertheless, the empirical findings show how this is not reflected through their actions over the years. The empirical data instead demonstrate how the company moderates its ambitions and strategic direction to become the best supplier of nutritious food. This indicate that GSF's described strategic intent has evolved from initially indicating prospective orientation to become more defensive throughout the study period.

"The Group shall be a leader in the area of aquaculture." (Grieg Seafood, 2011, p. 2)

"Grieg Seafood har satt seg et mål om å bli den beste leverandøren av sunn og næringsrik mat" (Grieg Seafood, 2016, p. 3)

Elaborated further on the inconsistency between the firm's prospective statements and defensive orientation that is reflected through their actions, this might reflect an organizational response to a challenging market environment. More specifically, it might be intended that the external challenges pose a threat that prevents GSF from reacting according to their strategic direction. As such, the company's failure to respond may therefore be anchored in the senior manager's mental models (de Gooyert et al., 2014), of which their judgment relates to risk under uncertainty (Tversky & Kahneman, 1974). The findings demonstrate how the firm has conducted incremental changes and thus, ended up operating along a constant operational trajectory. In line with this, previous research might suggest how this might have caused GSF to develop organizational inertia (cf. Doz & Kosonen, 2010; Tripsas & Gavetti, 2000; C.-Y. Tsai et al., 2008). This can further be strengthened by research related to top management's cognitive inertia that found this to be the reason to why organizations become inert in their actions (cf. Hopkins et al., 2013; Tripsas & Gavetti, 2000).

Overall, the empirical evidence showed how there were no significant changes to the firm's strategic orientation nor innovations to their business model throughout the period. As initially stated, the company has changed CEO's at two occasions, whereas both CEO's held antecedents from the salmon industry (table 20). In light of organizational behavioral theory, this might indicate how the CEO's past experience and mental models from the aquaculture industry (Carpenter et al., 2004; Hambrick & Mason, 1984) might lead them to act with the same value logic as they have always had, and therefore remained in status quo (Tripsas & Gavetti, 2000).

5.1.5 Norway Royal Salmon

Value configuration

From the empirical data ranging from 2011 to 2016, it is demonstrated how the company has grown from a mid-sized and partially integrated value chain, to becoming an integrated salmon production value chain (table 30). Norway Royal Salmon (hereafter NRS) has matured and become a major player, not only within its domestic market but also on a global scale. The empirical findings show how the organization has maintained a comprehensive focus and invested in measures to grow the value chain. This, in relation to aspects such as export and production of salmon (Norway Royal Salmon, 2012).

> *"NRS has in the last years focused heavily on transforming from being a salmon exporter to also being a salmon producer. The company has had an offensive investment strategy*

with strong focus on building efficient salmon farming systems. After substantial investments, the company presents itself as a modern company with new and efficient production equipment. There has also been considerable focus on organisational development in this period, going forward we expect this to be important both in our food fish production and in our trading activities." (Norway Royal Salmon, 2011, p. 4)

NRS's business model is relatively complex as it comprises of both a value chain and value network component. This combined is believed to make up a hybrid value configuration (table 30). The value chain component constitutes the largest part of the business and includes the company's own production of farmed salmon specifically hatchery, farming and processing. Since the introduction of the farming unit in 2006, NRS has had a continuous focus on growing their value chain (Norway Royal Salmon, 2011). As such, the company decided to increase the value chain by founding the subsidiary, NRS Settefisk AS in 2015 (Norway Royal Salmon, 2015, p. 11). This expanded the company's value chain to include egg, hatchery and smolt production. Prior to this initiative, NRS were dependent on purchasing smolt from vendors. This action is therefore believed to grow the company's upstream unit with the aim of becoming vertically integrated, and to capture additional value within their value chain (Norway Royal Salmon, 2015). The value network on the other hand, relates to the company's sales and marketing unit. The sales network links nodes including associates, chain members and external producers. These product offerings are being distributed to the international marketplace. Also, as part of the collaborative relationship, NRS provides quality assurance and support on a case-to-case basis (Fjeldstad & Snow, 2017). This to standardize the quality of the end-product which is sold and marketed by the company. Nevertheless, to the authors understanding, NRS does not generate direct revenue from the quality assurance initiatives, beyond having a standardized product sold from their sales unit (Norway Royal Salmon, 2011, 2012). For this reason, the company remain a hybrid value configuration which constitute of a value chain with a value network logic.

"The company's object is to produce, process, sell and distribute farmed fish, and to invest in other companies in the seafood business, in addition to provide quality assurance and chain activities for partner companies." (Norway Royal Salmon, 2011, p. 20)

Strategic typology

NRS has kept a high strategic focus on reducing production costs and developing the company's production efficiency (table 31). Example of such strategic measures can be illustrated through their focus on development within existing licenses, with the purpose of utilizing its maximum capacity (Norway Royal Salmon, 2011). Another example is their establishment of a new hatchery at Karlsøy in Troms (Norway Royal Salmon, 2016). This is meant to be an attempt to strengthen its production efficiency, whilst also reducing the firm's production costs, such as economies of scale. In view of this, it seems that NRS's strategic intent to balance growth and cost-effectiveness could be interpreted to underpin the company's strategic decisions during the six-year period.

> *"[..]the objective is to become Norway's most profitable salmon producer, and develop from a medium-size to a large aquaculture enterprise." (Norway Royal Salmon, 2014, p. 7)*

Furthermore, their focus on operational development is meant to reflect the firm's aim of leveraging on its own competence and resources. The strategic goal of developing through organic growth is believed to further reflect the firm's intention to grown within predictable environments and as such, reflect characteristics that are consistent with their defensive orientation (Snow et al., 2011).

> *"The Group's planned growth through utilisation of capacity in the existing licences." (Norway Royal Salmon, 2011, p. 9)*

In accordance with the company's strategic orientation and ambition to become the most profitable aquaculture company in Norway (Norway Royal Salmon, 2014), NRS entered into a strategic alliance with Aker ASA in 2015. The purpose was to develop an innovative offshore farming unit by utilizing experience and knowledge from both industries (Norway Royal Salmon, 2015). Aker ASA's held expert knowledge and extensive experience within offshore technology (e.g. Aker Solution), and NRS from aquaculture. The use of open innovation enable the company to develop a farming unit that would handle offshore farming in harsh conditions (cf. Chesbrough, 2003; Chesbrough, 2012). The alliance is believed to be consistent with the company's cost-effective measures because of how the offshore facility is designed to eliminate the biological problem, related to sea-lice. This reduce their second largest cost-driver within the salmon farming operation (PwC, 2017c).

> *"We have, together with Aker ASA, applied for 15 development licenses, the companies have developed an offshore salmon farming concept that facilitate sustainable growth in areas that the aquaculture technology thus far has not been able to exploit. This exciting project will contribute to the development of the aquaculture farms of the future." (Norway Royal Salmon, 2015, p. 7)*

In 2016, NRS expanded its operations to Iceland. This was their first foreign expansion and might thus be considered a prospective orientation by the firm (table 31). Nonetheless, despite their first foreign expansion, Iceland is perceived to uphold similar environmental and operational characteristics as Northern Norway, where NRS already hold significant presence. The coastlines around the north Atlantic ocean (e.g. Norway, Scotland, Faroe Island) is therefore considered to be a safe and predictable expansion for the company and for this reason, continues to define their strategies with a defensive orientation (Snow et al., 2011).

To conclude, NRS has employed strategies that have given the company growth and expansion into predictable markets (e.g. expanding to Iceland), as well as innovated and developed new technologies (e.g. offshore farming concept). Regardless, it has become evident how these strategies have been anchored in the intent of increasing operational efficiency and reducing costs. On this basis, the empirical findings clearly reflect how the company has maintained a defensive orientation throughout the six-year period (Miles et al., 1978; Snow et al., 2011).

Year	1st order concepts: Statement in annual report	2nd order themes: Research terminology	Aggregate dimensions
2011	*"In addition to the sales organisation – which constitutes the origin of the group – the Group currently has four subsidiaries that own a total of 25 licences. The Group also holds minority interests in seven companies, three of which are fish farming companies with a total of eight licences between them. There are also three harvesting plants and two smolt companies among these companies. The Group is thus involved in almost all links of the value chain, from smolt and salmon production, through harvesting and on to sales and marketing." (p 9)*	***Value chain***	***Value configuration***
	"The chain activities in NRS comprise a range of service offers intended to allow our partner producers to enjoy benefits of scale to which they would not otherwise have access." (p 11)		
	"The strategy of the Group is to run effective fish farming operations, as well as to sell the output from associates and partners directly to the market" (NRS;AR2011; p 26) "In a competitive market, this ensures good access to high-quality fish from a network consisting of own subsidiaries, associates, chain members and external producers. [....]. The chain activities in NRS comprise a range of service offers intended to allow our partner producers to enjoy benefits of scale to which they would not otherwise have access." (p 11)		
2012	*"Acquisition resulting in 37,75% ownership of Ranfjord Fiskeprodukter AS." (p 6)*		
2015	*Foundation of the wholly-owned subsidiary NRS Settefisk AS." (p 11)*		
	"[..] NRS has decided that we wish to establish a new hatchery on Karlsøy in Troms." (p 7)		
	"Acquisition resulting in 100% ownership of Nord Senja Laks AS." (p 11)		
2011	*"The strategy of the Group is to run effective fish farming operations, as well as to sell the output from associates and partners directly to the market." (p 26)*	***Value chain*** ***Value network***	
	"The company's object is to produce, process, sell and distribute farmed fish, and to invest in other companies in the seafood business, in addition to provide quality assurance and chain activities for partner companies." (p 20)		
2012	*"The company's object is to produce, process, sell and distribute farmed fish, and to invest in other companies in the seafood business, in addition to provide quality assurance and chain activities for partner companies." (p 24)*		
2013	*"The company's object is to produce, process, sell and distribute farmed fish, and to invest in other companies in the seafood business, in addition to provide quality assurance and chain activities for partner companies." (p 30)*		
2011	*"In a competitive market, this ensures good access to high-quality fish from a network consisting of own subsidiaries, associates, chain members and external producers." (p 11)*	***Value network***	

Table 30 - Analysis of findings - Value configuration - Norway Royal Salmon

Year	1st order concepts: Statement in annual report	2nd order themes: Research terminology	Aggregate dimensions
2011	*"The market is strong, and develops into both existing and new markets." (p 4)*	***Defender***	***Strategic typology***
	"The main focus for all employees in NRS is daily improvements in our work. This applies to our pursuit of further efficiency of salmon production through reduction of the company's production costs, and in terms of sales and marketing of salmon in the best-paying markets." (p. 4)		
	"The Group's planned growth through utilisation of capacity in the existing licences." (p 9)		
	"The Group has undertaken no activities during the year which may be defined as research and development." (p 28)		
2012	*"There has been considerable focus on organisational development during the last year, and going forward we expect this to be important both in our salmon production and in our trading activities." (p 5)*		
	"NRS has a strong focus on biological production and fish welfare and has initiated or is participating in the following projects." (p 34)		
2013	*"The main issue for both NRS and the industry will be to search for improvements for efficient and sustainable production." (p 6)*		
2015	*"Through our strategy, we have aimed to be one of the most profitable farming companies in Norway, and this means that we must have control over cost also in periods of good prospects." (p 7)*		
2016	*"[..] NRS has decided that we wish to establish a new hatchery on Karlsøy in Troms." (p 7)*		
2015	*"We are working on several exciting projects that will develop NRS from a medium-sized to large salmon farming company. Hatcheries for optimization of smolt logistics and development licenses are some of the projects. We have, together with Aker ASA, applied for 15 development licenses, the companies have developed an offshore salmon farming concept that facilitate sustainable growth in areas that the aquaculture technology thus far has not been able to exploit. This exciting project will contribute to the development of the aquaculture farms of the future." (p 7)*	***Analyzer***	
2011	*"NRS has in the last years focused heavily on transforming from being a salmon exporter to also being a salmon producer. The company has had an offensive investment strategy with strong focus on building efficient salmon farming systems. After substantial investments, the company presents itself as a modern company with new and efficient production equipment. There has also been considerable focus on organisational development in this period, going forward we expect this to be important both in our food fish production and in our trading activities." (p 4)*		
2016	*"Another new milestone for NRS in 2016 is our involvement on Iceland through our ownership of 50 percent of the company Arctic Fish ehf. Through this initiative we step outside Norway, and we strongly believe that Iceland will have the opportunity to increase its salmon production significantly over the next five years." (p 7)*		

Table 31 - Analysis of findings – Strategic typology - Norway Royal Salmon

Business model innovation

As the empirical data has made evident, Norway Royal Salmon has transformed from a mid-sized production company to becoming a large integrated salmon producer. Additionally, the firm's strategic orientation has shown to sustain a high focus on organic growth and value creation, mainly by applying the company's core competence (Snow et al., 2011). Through the use of open innovation (cf. Chesbrough, 2003, 2012), findings demonstrate how NRS has leveraged on its competence whilst benefiting from cross-industry experience. This could be exemplified through the company's new innovative farming solution (Norway Royal Salmon, 2015). The focus on organic growth as well as technological innovation has steered the company's development as opposed to their sales and marketing unit, which has remained at status-quo.

NRS's strategic decision to continuously develop their value configuration in 2015, is believed to have expanded the value chain and altered one business model element namely "value creation mechanism". This, because of the company being self-sustained in smolt in contrast to acquiring smolt through external vendors. As such, the change is meant to identify an incremental innovation to the firm's business model.

> *"NRS has in the last years focused heavily on transforming from being a salmon exporter to also being a salmon producer. The company has had an offensive investment strategy with strong focus on building efficient salmon farming systems. After substantial investments, the company presents itself as a modern company with new and efficient production equipment. There has also been considerable focus on organisational development in this period, going forward we expect this to be important both in our food fish production and in our trading activities" (Norway Royal Salmon, 2011, p. 4)*

The upper echelons mental models

The empirical findings have shown how the prospective orientation that is reflected in NRS's annual reports, has been contradictory to their actions. In other words, the inconsistency in the company's semantics found in their annual reports and the organizational outcomes, demonstrate how the top management team essentially has held a defensive orientation (Miles et al., 1978; Snow et al., 2011). Therefore, NRS have failed to act on its strategic direction by continuing to operate within the same predictable limits (C.-Y. Tsai et al., 2008). This could be exemplified through their statement on sea lice, and how it is considered to be the industry's largest challenge (e.g. Norway Royal Salmon, 2015, p. 7). Although, sea lice is a significant threat to the industry,

reports have shown how the rise of operational expenditure, in general, poses a greater risk to the industry (PwC, 2017c). More specifically, the operational cost related to feed accounts for 50 per cent while sea lice treatment currently accounts for 20 per cent of the total OPEX (PwC, 2017c).

> *"As I see it today, sea lice is the industry's biggest problem and a challenge that we must solve together" (Norway Royal Salmon, 2015, p. 7)*

What this aim to critically reflect, is how sea lice might be perceived as a great threat to the industry, yet it should not be the industry's highest priority. This is considered an interesting observation, which theoretically might seem to be a result of impacts from the external environment, and possible information-flow among the peers within the aquaculture industry. As a result, this might have developed into collective mental models (cf. Aspara et al., 2013; Narayanan et al., 2011; Porac et al., 1989; Porac et al., 1995; Stigliani & Ravasi, 2012). There can of course be many explanations for why NRS emphasize biological challenges, however this reflection is believed to be a possible outcome that is closely rooted in previous research (Hodgkinson, 1997; Mohammed et al., 2010; Porac et al., 1989; Porac et al., 1995). Elaborating further on their limited actions, it might be argued how NRS has become inert, which reflect their top manager's cognitive inertia based on their judgements when faced with uncertainty or perceived threat within the marketplace (Doz & Kosonen, 2010; Hodgkinson & Wright, 2002; Tripsas & Gavetti, 2000).

By reflecting further on the CEO's demographic characteristics and the potential influence this may have on NRS strategic decision-making (Carpenter et al., 2004; Hambrick & Mason, 1984), the empirical data found how the company has changed CEO one time during the six-year period (table 20). Both CEO's hold previous experience from the aquaculture industry that makes it possible to suggest how their dominant logic is anchored in the classical chain configuration (Fjeldstad & Snow, 2017; Prahalad & Bettis, 1986). The shift occurred in 2014 and the empirical finding does not show to any effect on the company's strategic orientation, as it continued at status quo (Hodgkinson & Wright, 2002; Tripsas & Gavetti, 2000). Correspondingly, through the influence of NRS's largest shareholder and the chairman (table 21), it is believed to be consistent with the influence from the company's CEO. This, shown through how both the chairman of the board and the company's CEO holds antecedents and experience solely from the respective industry. For this reason, it might be argued how this is likely to influence their perception and mental model on how a business is run (de Gooyert et al., 2014). NRS's value

configuration might therefore become a cognitive barrier to business model innovation (Chesbrough, 2010; Fjeldstad & Snow, 2017), as a consequence of the firm's decision-makers that might be possibly blinded by the company's dominant logic (Prahalad, 2004).

5.2 Summary of main findings

Findings demonstrate how four out of five companies were structured based on a value chain configuration (M. E. Porter, 1985; Stabell & Fjeldstad, 1998). Although the traditional value chain acted as the dominant configuration, the overall structure of these firms held a clear influence from a value network or value access logic (Fjeldstad, personal communication, April 6. 2018; Stabell & Fjeldstad, 1998). For example, NRS showed a value chain structure with a network logic. The company was initially founded as a sales company with a network configuration but has later developed their own salmon production unit. As such, they have linked their own salmon production value chain to their value network (Norway Royal Salmon, 2011). Marine Harvest and SalMar on the other hand, were identified as classical value chain configurations with a value access logic. This was reflected through how both firms apply the contract manufacturing unit (i.e. Morpol and InnovaMar) with the downstream part of the value chain (Plambeck & Taylor, 2005; Stabell & Fjeldstad, 1998). Although both companies provide a service that enables them to capitalize on external salmon producers, this initiative is merely restricted to the free capacity that these plants offer (Marine Harvest, 2012; SalMar, 2011). In contrast to the traditional value chain organizations, Lerøy is configured as a value network that, through the use of subsidiaries, partners and alliances, has been able to build a network that consist of a value chain logic. This because of how all these companies combined, constitute a total salmon production value chain (Fjeldstad & Ketels, 2006; Fjeldstad & Snow, 2017; Stabell & Fjeldstad, 1998). More specifically, Lerøy's expansion into white fish transformed the firms value configuration through linking the white fish segment, that is structured as a value chain, onto the company's value network (Lerøy Seafood Group, 2016).

The empirical data also indicate three primary barriers to business model innovation. First, the empirical data found a variation in the firm's strategic orientation. Two of the largest firms with respect to production volume (table 4) proactively searched for strategic initiatives. This, to help build and retain their strategic orientation e.g. expand into new markets and drive technology- and product innovation. This clearly indicated a prospective orientation (Miles et al., 1978; Snow et al., 2011). Opposed to this, the remaining firms showed a defensive focus that was mainly directed at reducing operational cost and growth within predictable markets and reducing risk

(Miles et al., 1978; Snow et al., 2011). The empirical data therefore indicate how firm's strategic orientation, when confronted with uncertainty, influence the top manager's risk attitude and consequently, the organizations strategic decision-making (e.g. Barr et al., 1992; Chattopadhyay et al., 2001; de Gooyert et al., 2014). The top managers became cognitive inert when confronted with threatening conditions and in turn, resulted in organizational inertia (Reger & Palmer, 1996; Tripsas & Gavetti, 2000; C.-Y. Tsai et al., 2008). Their attention is therefore directed at cost-consciousness and rigid organizational structures – reflecting a risk-averse behavior. As such, their actions are compliant with threat-rigidity theory (Ocasio, 1995; Staw et al., 1981). This is compliant with previous research of how the greater the link between strategic intent and manager's mental models, the more consistent the firm will be in its actions (cf. Aspara et al., 2013; Tikkanen et al., 2005). As a second point, findings revealed how regardless of the firm's value configurations they were all disposed to business model innovation. It was demonstrated how prospectors were inclined to renew their value configuration logic (e.g. Lerøy changed into a hybrid value configuration) and conduct organizational change (Chattopadhyay et al., 2001). Contrary, those with a defensive orientation could seem to hold an anchoring bias to the firms dominant logic (Prahalad & Bettis, 1986). The firms value configuration may therefore be argued to act as a cognitive barrier (Chesbrough, 2010) and blinder (Prahalad, 2004), that limits the defensive firms from conducting innovation to their business models (Fjeldstad & Snow, 2017).

Third, another explanation that is indicative of barriers to innovate were how defenders were more inclined to hold cognitive barriers to business model innovation, relative to those with a prospective orientation (cf. Chesbrough, 2010; Miles et al., 1978). For such cognitive barriers, it might be critically argued whether these firms and its top management team potentially lack knowledge and awareness to what business model innovation actually includes (Chesbrough, 2010). If so, this could potentially prevent the largest proportion of companies from innovating (von den Eichen et al., 2015). Similar research has indicated how a combination of the top manager's over-enthusiasm and the lack to understand business model renewal, might prevent innovation (Saebi, 2016; von den Eichen et al., 2015). This could be a possible explanation to why the term is misunderstood, and how to implement and control the transformation process (Saebi, 2016; von den Eichen et al., 2015). An example is SalMar that continuously state how they will innovate their business model (SalMar, 2011). However, the semantics in their annual reports does not reflect such outcomes. Recent studies also found how only a minor percentage of Norwegian firms had the awareness and actions to innovate the business model over time (Saebi & Singh, 2016).

Opposed to barriers, the empirical findings suggest that the strategic orientation showed to underpin the firm's commitment to perform radical or incremental innovations to their business models (Miles et al., 1978; Saebi et al., 2017). Those firms that were prone to conduct radical innovations were also found to be those identified with a prospective orientation. In contrast, defensive companies showed to be less inclined to innovate and therefore only completed incremental changes. These findings can be linked to earlier literature on organizational behavior that describe how prospective firms are more open to organizational change (cf. Chattopadhyay et al., 2001). For prospective firms, these findings seem to coincide with prospect theory (cf. Kahneman & Tversky, 1979; Tversky & Kahneman, 1992), because of how they react to the uncertain market environment by adapting radical innovations to their business model – reflecting a risk-seeking behavior (Saebi et al., 2017). Such action illustrate a predictably irrational attempt from the top manager's to regain the company's strategic reference point (Fiegenbaum, Hart, & Schendel, 1996). This is exemplified by how these firms protect their cash flow through increased investments. In stark contrast, the defensive firms predominantly remained at status quo or at best, conducted incremental innovations to their business models.

The empirical findings also demonstrate how board members with external experience could have a potential influence on business model innovation. Firms with board members that had experience from outside industries (table 21), showed to be those that were able to innovate their business model and extend value configurations beyond their current value logic. Links are drawn between the firm's largest shareholders and how they adapt past-experience to the company's existing business model. Findings illustrate how prospectors initiate strategic decisions that expand the business into more complex value configurations. For example, Lerøy and Marine Harvest expanded into service vessels and adapted the business model from the core-businesses to their largest shareholders, Møgster Group through DOF and Gervan Trading through Deepsea supply. In contrast, SalMar's largest shareholder is a private investment company owned by Gustav Witzøe (also founder and board member in SalMar) (table 21). Gustav Witzøe hold extensive experience, yet solely from the aquaculture industry. This might indicate how his antecedents and mental models are largely anchored in the traditional industry. According to how three of five companies showed to be inert, these were observed as those with shareholders that held antecedents from the industry (table 21). This was compliant with previous research that claimed how strategic decision-making has a future perspective, and that the outcome of these decisions is grounded in the manager's past (cf. Das & Teng, 1999; de Gooyert et al., 2014; Weick, 1995). This illustrate how the top manager's mental perception govern the

firm’s willingness to innovate their business model (Doz & Kosonen, 2010). More specifically, organizations path dependency and managers personal antecedents, for instance the organizations previous strategy and future strategic direction, sets the framework to which impact their openness to adopt new business models (Saebi et al., 2017). However, despite a certain correlation between shareholders antecedence and their business model innovation, it was found no direct link between the CEO's past-experience and innovation to their business model. All CEO’s proved to have experience rooted in the sector (table 20) and it could therefore be assumed that professional experience alone will not yield any significant effect on business model innovation.

5.3 Main challenges and implications

The study revealed certain challenges through unexpected findings. Such unexpected findings were the distinction between incremental- and radical innovation that showed to be underpinned by the firm’s strategic orientation. This conflicted with prior research that found no correlation between firm’s ability to innovate their business model and threat-rigidity theory (Saebi et al., 2017; Staw et al., 1981). The empirical data also demonstrated findings that could not be explained adequately through the theoretical anchoring of the study. The absence of a theoretical explanation was evident through changes to Marine Harvest and SalMar’s value configurations. This, because of their new business segments (i.e. Morpol and InnovaMar) that could not be defined according to the chain-shop-network typology, and therefore prevented a precise definition of their configurations. However, with the theoretical anchoring of the study, it was possible to propose a classification viz., value access configuration (i.e. contract manufacturing and available assets) (Fjeldstad, personal communication, April 6. 2018; Lorange & Fjeldstad, 2012), that has been elaborated in previous sub-chapters of the respective companies.

For other practical implications, it had to be decided when the actual business model innovation took place. For interpretation purposes, it was naturally decided that the innovation was conducted when the top management had taken the strategic decision to innovate. This could be exemplified by SalMar’s InnovaMar plant that was sanctioned in 2007, yet first became operative and generated revenues from external parties in 2011.

6 Conclusion

The final chapter will draw conclusions from what was initially promised to be addressed at the beginning of the master thesis.

6.1 Evaluation of research question

When exposed to external shifts, the empirical data demonstrate a difference in how organizations react under uncertainty. This is based on how firm's strategic orientation reflects the top manager's risk attitude. More specifically, the strategic orientation is the company's reference point when confronted with market threats. This explains how the firm's risk-attitude is an underlying factor to their actions. The findings further support how the senior manager's mental models and their antecedents govern the strategic orientation of the firm. Once confronted with threat, prospective organizations were found to be risk-seeking, and thus radically innovated their business models accordingly. Such managerial behavior seem to reflect an attempt to regain their strategic reference point (Fiegenbaum et al., 1996) and is consistent with prospect theory (cf. Kahneman & Tversky, 1979; Tversky & Kahneman, 1992). On the contrary, it was found how defensive organizations became risk-averse. To handle the situation, these firms conducted incremental or no innovations to their business model, subsequently increasing attention to cost-reduction and remained in status quo. Such organizational behavior indicated a linkage to threat-rigidity theory (cf. Staw et al., 1981) and organizational inertia (e.g. Doz & Kosonen, 2010; Tripsas & Gavetti, 2000). Findings also indicate how firm's value configuration could act as a blinder (Prahalad, 2004) to business model innovation (Fjeldstad & Snow, 2017). This was especially evident among firms with a defensive orientation.

Overall, the empirical findings show how top manager's and their strategic orientation play a dominant role to business model innovation. In other words, the data supports that in the appearance of uncertainty and market threats, the top manager's mental models are essential in the decision-making process related to innovation to firm's business models. This, through how the internal context and external conditions influence managers mental models, and how the innovation process is dependent on top managers ability to renew their mental models in accordance with market conditions (figure 13). On this basis, the study positively confirms the independent variable of top manager's mental models has a significant effect on business model innovation

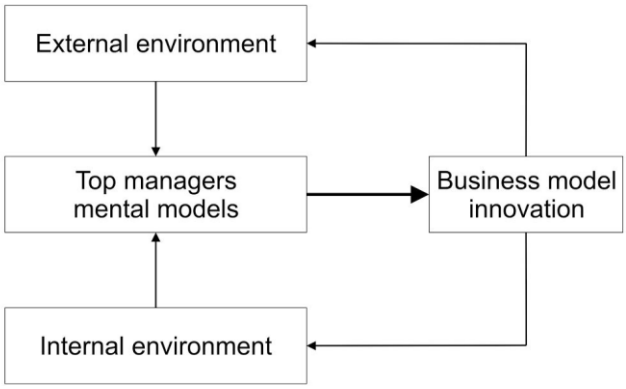

Figure 13 – The cognitive aspect of business model innovation

6.2 Compliance with previous research

Most of the empirical findings were expected by the author. First and foremost, the empirical findings point to a clear association between the managerial cognition and business model innovation. This corresponds to prior research on business model innovation and the cognitive aspect (cf. Aspara et al., 2013; Chesbrough, 2010; Saebi et al., 2017; Tikkanen et al., 2005). The empirical findings were consistent with research in organizational theory, which confirmed how companies that were confronted with external threat, were also those disposed to organizational change (Barr et al., 1992; Bogner & Barr, 2000; Chattopadhyay et al., 2001) and business model innovation (Saebi et al., 2017). Opposed to this, the empirical findings seem to support threat-rigidity theory (Staw et al., 1981). This in respect to how defensive organizations were observed as behaving risk-averse, once confronted with market threats. These findings were contradictory to Saebi et al. (2017) which did not find supporting evidence to confirm the theory. Nevertheless, consistent with Saebi et al. (2017), the study describes the relation between firm's strategic orientation and their ability to innovate their business model. The importance of prospective versus defensive firms in respect to radical and incremental innovations, is however hitherto undescribed in academic literature.

Related to firm's value configuration, it was found to have a potential impact on the renewal process of firm's business models. This was closely linked to previous literature, which argue how a firms dominant logic (Prahalad, 2004; Prahalad & Bettis, 1986) become a cognitive barrier to business model innovation (Chesbrough, 2010; Fjeldstad & Snow, 2017; Zott & Amit, 2010). The findings indicate how the upper echelons decision-making was influenced by their mental models and antecedents. This coincide with how top manager's strategic decisions have a future perspective, however that the outcome of these decisions is grounded in their background and

experience (cf. Carpenter et al., 2004; Das & Teng, 1999; de Gooyert et al., 2014; Hambrick & Mason, 1984; Weick, 1995).

Research has also found how innovation is generally led by MNEs, and how Norwegian firms hold low levels of business model innovation (cf. Cooke, 2016; Saebi & Foss, 2015). Findings confirm the low level of innovation as 60 per cent of the firms, primarily conducted incremental innovations to their business models. However, the MNEs that reflected the minority of the sample (table 4), proved to implement radical business model innovations. The empirical data also showed that to confront the challenging marketplace, 80 per cent of the firms took measures to invest in new technological solutions. These findings are in line with recent industry analysis, which illustrate how 75 per cent of senior executives are confident that their firm will invest and adapt in new technologies in upcoming years (PwC, 2017c).

Despite some non-compliant results, most empirical findings coincide with preceding research on organizational theory. This, by illustrating how the cognitive aspect plays a dominant role, not only in the creational aspect (cf. Tikkanen et al., 2005; Zott & Amit, 2010) but also through the process of business model innovation (cf. Aspara et al., 2013; Chesbrough, 2010; Saebi et al., 2017).

6.3 Limitations and opportunities

Based on the design set for the thesis, the study was dependent on organizations that were listed on the Oslo Stock Exchange (OSE). The sample was therefore not randomly selected. Theoretically, due to the study's restriction to one country and industry, this would mean it is limited generalizability to firms within the aquaculture sector operating in Norway. However, since the companies represent the five largest salmon-firms listed on the OSE and Norway being the leading seafood nation, it is believed to be a significant representation of the aquaculture industry in general (Krippendorff, 2013). Furthermore, the market cap of the five different companies are identified to be among the 55 largest firms in Norway (per March 2018). For this reason, it is supposed that the study may be transferable to the entire aquaculture industry and possibly supplement studies on Norwegian companies in general. As such, it may be used to elaborate on current literature on business model innovation in Norway.

The coding scheme is also believed to be transferable beyond the thesis, and therefore considered appropriate and applicable to future studies on organizational behavior and business model innovation.

6.4 Future research

The author is humble and acknowledge how additional research methods could have strengthened the empirical findings. Using content-analysis as a method, the ideal approach would be to use both a qualitative and quantitative approach (Kaplan et al., 2003; Weber, 1990). In addition, it is believed that supplementary qualitative research with industry experts or in-depth interviews with the top management of the respective firms, would allowed for more comprehensive findings (Kaplan, 2008). This would also have allowed for a quality assurance mechanism for the empirical data. Nevertheless, it is necessary to point out how the selected research method was both essential and feasible considering the limitations and constraints of the master thesis.

For future research on the topic, it could also be emphasized the need to investigate the extension of these results in other respective industries, countries and organizations. The study was limited to publicly listed aquaculture companies in Norway. This meant that the sample neglected other important firms such as Faroe, Chilean, Canadian and privately non-listed firms (e.g. Bakkafrost, Salmones Camanchaca, Cooke Aquaculture and Cermaq). From an upper echelon perspective, it is argued how certain characteristics shape top managements mental models (cf. Carpenter et al., 2004; Finkelstein & Hambrick, 1990; Hambrick & Mason, 1984). As such, it could be suggested that future research, analyze the aquaculture industry in general, and investigate whether cross-country differences affect firm's business model innovation.

7 Reference list

Achtenhagen, L., Melin, L., & Naldi, L. (2013). Dynamics of Business Models – Strategizing, Critical Capabilities and Activities for Sustained Value Creation. *Long Range Planning, 46*(6), 427-442. doi:https://doi.org/10.1016/j.lrp.2013.04.002

Afuah, A., & Tucci, C. (2001). *Internet Business Models and Strategies*. New York, NY: McGraw-Hill Irvin.

Alm, E., Colliander, N., Deforche, F., Lind, F., Stohne, V., & Sundström, O. (2016). *Digitizing Europe: why northern european frontrunners Must Drive digitalization of the EU economy*. Retrieved from The Boston Consulting Group: http://image-src.bcg.com/BCG-Digitizing-Europe-May-2016_tcm22-36552.pdf

Amit, R., & Zott, C. (2001). Value creation in E-business. *Strategic Managament Journal, 22*(6-7), 493-520. doi:10.1002/smj.187

Amit, R., & Zott, C. (2012). Creating value through business model innovation. *MIT Sloan Management Review, 53*(3).

Anand, N., & Barsoux, J.-L. (2017). What Everyone Gets Wrong About Change Management. *Harvard Business Review*(November-December 2017 issue), 78-85.

Andersen, E., & Sannes, R. (2017). Hva er digitalisering? *Magma, 6*, 18-24.

Andersson, L., & Van der Heyden, L. (2016). *The Real Impact of Digital - As seen from the "Virtual Coalface"*. Retrieved from This Fluid World: http://www.thisfluidworld.com/wp-content/uploads/2016/04/The_Real_Impact_of_Digital.pdf

Andersson, L., & van der Heyden, L. (2017). *Directing Digitalisation: Guidelines for boards and executives*. Retrieved from This Fluid World: http://www.thisfluidworld.com/wp-content/uploads/2017/02/Corporate-governance-February-2017.pdf

Andrews, K. R. (1971). *The Concept of Corporate Strategy*. Homewood, Ill: Dow Jones-Irwin.

Andrews, K. R. (1980). *The Concept of Corporate Strategy* (Vol. 2nd). Homewood, IL: Dow-Jones Irwin.

Andries, P., & Debackere, K. (2013). Business Model Innovation: Propositions on the Appropriateness of Different Learning Approaches. *Creativity and Innovation Management, 22*(4), 337-358. doi:10.1111/caim.12033

Ansoff, H. I. (1965). *Corporate Strategy: An Analytic Approach to Business Policy for Growth and Expansion*. New York, NY: McGraw-Hill.

Arduin, P.-E., Grundstein, M., & Rosenthal-Sabroux, C. (2015). *Information and Knowledge Systems* (Vol. 2): Wiley.

Aspara, J., Hietanen, J., & Tikkanen, H. (2010). Business model innovation vs replication: financial performance implications of strategic emphases. *Journal of Strategic Marketing, 18*(1), 39-56. doi:10.1080/09652540903511290

Aspara, J., Lamberg, J.-A., Laukia, A., & Tikkanen, H. (2013). Corporate Business Model Transformation and Inter-Organizational Cognition: The Case of Nokia. *Long Range Planning, 46*(6), 459-474. doi:10.1016/j.lrp.2011.06.001

Aspara, J., & Tikkanen, H. (2013). Creating novel consumer value vs. capturing value: Strategic emphases and financial performance implications. *Journal of Business Research, 66*(5), 593-602. doi:10.1016/j.jbusres.2012.04.004

Austlid, H. (2017). Alt som kan digitaliseres må digitaliseres. Retrieved from https://e24.no/det-nye-norge/digitalisering/kronikk-det-nye-norge-ikt-norge-sjef-heidi-austlid-alt-som-kan-digitaliseres-maa-digitaliseres/24096090

Barber, B. M., & Odean, T. (2008). All That Glitters: The Effect of Attention and News on the Buying Behavior of Individual and Institutional Investors. *Review of Financial Studies*, 785-818.

Barr, P. S., Stimpert, J. L., & Huff, A. S. (1992). Cognitive change, strategic action, and organizational renewal. *Strategic Management Journal, 13*(S1), 15-36. doi:10.1002/smj.4250131004

Belleghem, S. V. (2015). *When Digital Becomes Human. The transformation of customer relationships* Great Britain and United States Kogan Page Limited.

Bengtsson, M. (2016). How to plan and perform a qualitative study using content analysis. *NursingPlus Open, 2*, 8-14. doi:http://dx.doi.org/10.1016/j.npls.2016.01.001

Björkdahl, J., & Holmén, M. (2013). Business model innovation – the challenges ahead. *International Journal of Product Development, 18*(3/4), 13.

Bloomberg. (2018a). Alf-Helge Aarskog - Curriculum Vitae. Retrieved from https://www.bloomberg.com/profiles/people/16672079-alf-helge-aarskog

Bloomberg. (2018b). Henning K. Beltestad - Curriculum Vitae. Retrieved from https://www.bloomberg.com/research/stocks/people/person.asp?personId=51813011&privcapId=2381904

Bloomberg. (2018c). Leif-Inge Nordhammer - Curriculum Vitae. Retrieved from https://www.bloomberg.com/research/stocks/people/person.asp?personId=22651651&privcapId=33939025

Bogner, W. C., & Barr, P. S. (2000). Making Sense in Hypercompetitive Environments: A Cognitive Explanation for the Persistence of High Velocity Competition. *Organization Science, 11*(2), 212-226. doi:10.1287/orsc.11.2.212.12511

Bolstad, S., & Lie, E. (2014). *Norway more innovative than previous surveys suggest*. Retrieved from Statistics Norway https://www.forskningsradet.no/en/Newsarticle/%20%E2%80%93%20Norway_more_innovative_than_previous_surveys_suggest/1253997022614

Boroditsky, L. (2001). Does Language Shape Thought?: Mandarin and English Speakers' Conceptions of Time. *Cognitive Psychology, 43*(1), 1-22. doi:https://doi.org/10.1006/cogp.2001.0748

Bounfour, A. (2015). *Digital Futures, Digital Transformation: From Lean Production to Acceluction*: Springer International Publishing.

Bourgeois, L. J., & Eisenhardt, K. M. (1988). Strategic Decision Processes In High Velocity Environments: Four Cases in the Microcomputer Industry. *Management Science, 34*(7), 816-835.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. doi:http://dx.doi.org/10.1191/1478088706qp063oa

Bryman, A., & Bell, E. (2011). *Business Research Methods* (Vol. Third Edition). Oxford, United Kingdom: Oxford University Press.

Brynjolfsson, E., & McAfee, A. (2015). *The Second Machine Age: Work, Progress, and Prosperity In a Time of Brilliant Technologies*. New York, NY: W.W. Norton & Co.

Burgelman, R. A. (2002). Strategy as vector and the inertia of coevolutionary lock-in. *Administrative Science Quarterly, 47*(2), 325-357. doi:https://doi-org.ezproxy.uis.no/10.2307/3094808

Carpenter, M. A., Geletkanycz, M. A., & Sanders, W. G. (2004). Upper Echelons Research Revisited: Antecedents, Elements, and Consequences of Top Management Team Composition. *Journal of Management, 30*(6), 749-778. doi:10.1016/j.jm.2004.06.001

Casadesus-Masanell, R., & Ricart, J. E. (2010). From Strategy to Business Models and onto Tactics. *Longe Range Planning, 43*(2), 195-215.

Casadesus-Masanell, R., & Zhu, F. (2013). Business model innovation and competitive imitation: The case of sponsor-based business models. *Strategic Management Journal, 34*(4), 464-482. doi:10.1002/smj.2022

Chandler, A. D. (1962). *Strategy and structure: chapters in the history of the industrial enterprise*. Cambridge: MIT Press.

Chatterjee, A., & Hambrick, D. C. (2007). It's All about Me: Narcissistic Chief Executive Officers and Their Effects on Company Strategy and Performance. *Administrative Science Quarterly, 52*(3), 351-386. doi:10.2189/asqu.52.3.351

Chattopadhyay, P., Glick, W. H., & Huber, G. P. (2001). ORGANIZATIONAL ACTIONS IN RESPONSE TO THREATS AND OPPORTUNITIES. *Academy of Management Journal, 44*(5), 937-955. doi:10.2307/3069439

Chermack, T. J. (2003). Mental Models in Decision Making and Implications for Human Resource Development. *Advances in Developing Human Resources, 5*(4), 408-422. doi:10.1177/1523422303257373

Chesbrough, H. W. (2003). *Open Innovation: The New Imperative for Creating and Profiting from Technology*. Boston, MA: Harvard Business School Press.

Chesbrough, H. W. (2007). Business model innovation: it's not just about technology anymore. *Strategy & Leadership, 35*(6), 12-17. doi:doi:10.1108/10878570710833714

Chesbrough, H. W. (2010). Business Model Innovation: Opportunities and Barriers. *Long Range Planning, 43*, 354-363. doi:10.1016/j.lrp.2009.07.01

Chesbrough, H. W. (2012). Open Innovation: Where We've Been and Where We're Going. *Research-Technology Management, 4*(Special Issue), 20-27. doi:DOI: 10.5437/08956308X5504085

Chesbrough, H. W., & Rosenbloom, R. S. (2002). The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies. *Industrial and Corporate Change, 11*(3), 529-555.

Cho, J. Y., & Lee, E.-H. (2014). Reducing Confusion about Grounded Theory and Qualitative Content Analysis: Similarities and Differences. *The Qualitative Report, 19*(32), 1-20.

Cho, T. S., & Hambrick, D. C. (2006). Attention as the Mediator Between Top Management Team Characteristics and Strategic Change: The Case of Airline Deregulation. *Organization Science, 17*(4), 453-469. doi:10.1287/orsc.1060.0192

Christensen, C. M. (1997). *The Innovators Dilemma: When New Technologies Cause Great Firms to Fail*. Boston, MA: Harvard Business School Press

Christensen, C. M., Bartman, T., & Van Bever, D. (2016). The hard truth about business model innovation. *MIT Sloan Management Review, 58*(1), 31-40.

Christensen, C. M., Grossman, J. H., & Hwang, J. (2009). *The Innovator's Prescription: A Disruptive Solution for Health Care.* London, United States: McGraw-Hill

Christensen, C. M., Wang, D., & Van Bever, D. (2013). Consulting on the Cusp of Disruption. *Harvard Business Review, 91*(10), 106-114.

Clauss, T. (2017). Measuring business model innovation: conceptualization, scale development, and proof of performance. *R&D Management, 47*(3), 385-403. doi:10.1111/radm.12186

Cooke, P. (2016). Nordic innovation models: Why is Norway different? *Norwegian Journal of Geography - Norsk Geografisk Tidsskrift, 70*(3), 190-201. doi:10.1080/00291951.2016.1167120

Craik, K. J. W. (1943). *The Nature of Explanation*: Cambridge University Press.

Cyert, R. M., & March, J. G. (1963). *A Behavioral Theory of the Firm*. New Jersey: Prentice Hall.

Dalland, O. (2010). *Metode og oppgaveskriving for studenter*. Oslo: Gyldendal Norsk Forlag AS.

Daniels, K., Johnson, G., & Chernatony, L. d. (2002). Task and Institutional Influences on Managers' Mental Models of Competition. *Organization Studies, 23*(1), 31-62. doi:10.1177/0170840602231002

Das, T. K., & Teng, B.-S. (1999). Cognitive Biases and Strategic Decision Processes: An Integrative Perspective. *Journal of Management Studies, 36*(6), 757-778. doi:10.1111/1467-6486.00157

Day, G. S. (1994). The capabilities of market-driven organizations. *Journal of Marketing, 58*(4), 37.

de Gooyert, V., Rouwette, E., Kranenburg, H., Freeman, E., & van Breen, H. (2014). Strategic Cognition in Transition? Individual Mental Model Renewal in the Energy Sector. *Academy of Management Proceedings, 1*, 14014-14014. doi:10.5465/AMBPP.2014.14014abstract

de Wit, B. (2017). *Strategy: An International Perspective* (Vol. 6): Cengage Learning.

Denning, P. J., & Lewis, T. G. (2017). Exponential Laws of Computing Growth. *Communications of the ACM, 60*(1), 11. doi:DOI:10.1145/2976758

Diamandis, P. H., & Kotler, S. (2015). *Bold: How to Go Big, Create Wealth and Impact the World*. New York: Simon & Schuster.

DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review, 48*(2), 147-160. doi:10.2307/2095101

Doz, Y. L., & Kosonen, M. (2010). Embedding strategic agility: A leadership agenda for accelerating business model renewal. *Long Range Planning, 43*(2), 370-382. doi:doi:10.1016/j.lrp.2009.07.006

Drath, R., & Horch, A. (2014). Industry 4.0: Hit or Hype? *IEEE Industrial Electronics Magazine, 8,* 56-58.

Dremel, C., Wulf, J., Herterich, M. M., Waizmann, J.-C., & Brenner, W. (2017). How AUDI AG Established Big Data Analytics in Its Digital Transformation. *MIS Quarterly Executive, 16*(2).

Drucker, P. F. (1954). *The practice of management*. New York: Harper & Row.

Dunning, D. (2011). *The Dunning-kruger Effect: On Being Ignorant of One's Own Ignorance*. In Vol. 44. *Advances in Experimental Social Psychology* (pp. 247-296).

Dörner, K., & Edelman, D. (2015). What 'digital' really means. Retrieved from https://www.mckinsey.com/industries/high-tech/our-insights/what-digital-really-means

Economist Intelligence Unit. (2005). *Business 2010: Embracing the challenge of change*. Retrieved from The Economist: http://graphics.eiu.com/files/ad_pdfs/business%202010_global_final.pdf

Fiegenbaum, A., Hart, S., & Schendel, D. (1996). Strategic Reference Point Theory. *Strategic Management Journal, 17*(3), 219-235. doi:doi:10.1002/(SICI)1097-0266(199603)17:3<219::AID-SMJ806>3.0.CO;2-N

Finkelstein, S., & Hambrick, D. C. (1990). Top-Management-Team Tenure and Organizational Outcomes: The Moderating Role of Managerial Discretion. *Administrative Science Quarterly, 35*(3), 484-503.

Fish Pool. (2018). Price history – weekly, monthly and annual average. Retrieved from http://fishpool.eu/price-information/spot-prices/history/

Fitzgerald, M., Kruschwitz, N., Bonnet, D., & Welch, M. (2014). *Embracing Digital Technology. A new Strategic Imperative.* Retrieved from MITSloan Management Review:

Fjeldstad, Ø. D. (personal communication, April 6. 2018). [Value access - available asset business model].

Fjeldstad, Ø. D., & Haanæs, K. (2001). Strategy Tradeoffs in the Knowledge and Network Economy. *Business Strategy Review, 12*(1), 1-10. doi:doi:10.1111/1467-8616.00160

Fjeldstad, Ø. D., & Ketels, C. H. M. (2006). Competitive Advantage and the Value Network Configuration: Making Decisions at a Swedish Life Insurance Company. *Long Range Planning, 39*(2), 109-131. doi:https://doi.org/10.1016/j.lrp.2006.05.001

Fjeldstad, Ø. D., & Snow, C. C. (2017). Business models and organization design. *Long Range Planning*, 1-8. doi:https://doi.org/10.1016/j.lrp.2017.07.008

Forrester, J. W. (1958). Industrial dynamics: a major breakthrough for decision makers. *Harvard Business Review, 36*(4), 37-66.

Foss, N. J., & Saebi, T. (2017). Fifteen Years of Research on Business Model Innovation. *Journal of Management, 43*(1), 200-227. doi:10.1177/0149206316675927

Foss, N. J., & Saebi, T. (2018). Business models and business model innovation: Between wicked and paradigmatic problems. *Long Range Planning, 51*(1), 9-21. doi:https://doi.org/10.1016/j.lrp.2017.07.006

Freeman, R. E., Wicks, A. C., & Parmar, B. (2004). Stakeholder Theory and "The Corporate Objective Revisited". *Organization Science, 15*(3), 364-369. doi:10.1287/orsc.1040.0066

Gassmann, O., Frankenberger, K., & Csik, M. (2014). *The Business Model Navigator: 55 Models that will revolutionise your Business*. Harlow: Pearson.

Gatignon, H., & Xuereb, J.-M. (1997). Strategic Orientation of the Firm and New Product Performance. *Journal of Marketing Research (JMR), 34*(1), 77-90.

Gerstner, W.-C., König, A., Enders, A., & Hambrick, D. C. (2013). CEO Narcissism, Audience Engagement, and Organizational Adoption of Technological Discontinuities. *Administrative Science Quarterly, 58*(2), 257-291. doi:10.1177/0001839213488773

Ghauri, P., & Grønhaug, K. (2010). *Research Methods in Business Studies* (Fourth Edition ed.). Edinburgh Gate, England: Pearson Education Limited.

Giesen, E., Riddleberger, E., Christner, R., & Bell, R. (2009). *Seizing the advantage: When and how to innovate your business model*. Retrieved from IBM Institute for Business Value: http://www.ibm.com/cz/study/pdf/GBE03260USEN.pdf.

Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking Qualitative Rigor in Inductive Research:Notes on the Gioia Methodology. *Organizational Research Methods, 16*(1), 15-31. doi:10.1177/1094428112452151

Grieg Seafood. (2011). Annual Report 2011. Retrieved from https://www.griegseafood.no/wp-content/uploads/2018/03/GSF-2011-ENG.pdf

Grieg Seafood. (2012). Annual Report 2012. Retrieved from https://www.griegseafood.no/wp-content/uploads/2016/08/GSF2012_NORSK.pdf

Grieg Seafood. (2013). Annual Report 2013. Retrieved from https://www.griegseafood.no/wp-content/uploads/2014/12/GSF2013-NORSK-FINAL.pdf

Grieg Seafood. (2014). Annual Report 2014. Retrieved from http://grieg14.digirapport.no/wp-content/uploads/2015/06/GSF-2014-NORSK-FINAL1.pdf

Grieg Seafood. (2015). Annual Report 2015. Retrieved from https://www.griegseafood.no/wp-content/uploads/2016/06/GSF2015aarsrapportNO3.pdf

Grieg Seafood. (2016). Annual Report 2016. Retrieved from https://www.griegseafood.no/wp-content/uploads/2017/04/GSF_2016_aarsrapport_NO.pdf

Grieg Seafood. (2018). About Greig Seafood. Retrieved from https://www.griegseafood.no/grieg-seafood-asa/about-grieg-seafood/

Grimm, C. M., & Smith, K. G. (1991). Management and Organizational Change: A Note on the Railroad Industry. *Strategic Management Journal, 12*(7), 557-562.

Group, I. (2015). *Digitalisation and automation in the Nordic manufacturing sector - Status, potentials and barriers*. Retrieved from http://norden.diva-portal.org/smash/get/diva2:876658/FULLTEXT01.pdf

Hagberg, J., Jonsson, A., & Egels-Zandén, N. (2017). Retail digitalization: Implications for physical stores. *Journal of Retailing and Consumer Services, 39*(Retailing and Consumer Services), 264-269. doi:https://doi.org/10.1016/j.jretconser.2017.08.005

Hambrick, D. C. (2007). Upper Echelons Theory: An Update. *The Academy of Management Review, 32*(2), 334-343. doi:10.2307/20159303

Hambrick, D. C., & Mason, P. A. (1984). Upper Echelons: The Organization as a Reflection of Its Top Managers. *The Academy of Management Review, 9*(2), 193-206. doi:10.2307/258434

Haynie, J. M., Shepherd, D. A., & Patzelt, H. (2012). Cognitive Adaptability and an Entrepreneurial Task: The Role of Metacognitive Ability and Feedback. *Entrepreneurship Theory and Practice, 36*(2), 237-265. doi:10.1111/j.1540-6520.2010.00410.x

Hess, T., Matt, C., Benlian, A., & Wiesböck, F. (2016). Options for Formulating a Digital Transformation Strategy. *MIS Quarterly Executive, 15*(2).

Hill, R. C., & Levenhagen, M. (1995). Metaphors and Mental Models: Sensemaking and Sensegiving in Innovative and Entrepreneurial Activities. *Journal of Management, 21*(6), 1057-1074. doi:10.1177/014920639502100603

Hodgkinson, G. P. (1997). The Cognitive Analysis of Competitive Structures: A Review and Critique. *Human Relations, 50*(6), 625-654. doi:10.1177/001872679705000601

Hodgkinson, G. P., Bown, N. J., Maule, A. J., Glaister, K. W., & Pearman, A. D. (1999). Breaking the frame: an analysis of strategic cognition and decision making under uncertainty. *Strategic Managament Journal, 20*(10), 977-985. doi:10.1002/(SICI)1097-0266(199910)20:10<977::AID-SMJ58>3.0.CO;2-X

Hodgkinson, G. P., Maule, A. J., Bown, N. J., Pearman, A. D., & Glaister, K. W. (2002). Further reflections on the elimination of framing bias in strategic decision making. *Strategic Management Journal, 23*(11), 1069-1076. doi:10.1002/smj.266

Hodgkinson, G. P., & Sparrow, P. (2002). *The Competent Organization: A Psychological Analysis of the Strategic Management Process*: Open University Press.

Hodgkinson, G. P., & Wright, G. (2002). Confronting Strategic Inertia in a Top Management Team: Learning from Failure. *Organization Studies, 23*(6), 949-977. doi:10.1177/0170840602236014

Hopkins, W. E., Mallette, P., & Hopkins, S. A. (2013). Proposed Factors Influencing Strategic Inertia/Strategic Renewal in Organizations. *Academy of Strategic Management Journal, 12*(2), 77-94.

Johnson-Laird, P. N. (1983). *Mental Models*: Cambridge University Press.

Johnson, G., & Scholes, K. (1999). *Exploring Corporate Strategy*. Essex, UK: Prentice Hall.

Johnson, G., Whittingston, R., Scholes, K., Angwin, D., & Regnér, P. (2017). *Exploring Strategy: Text and Cases* (11th Ed ed.). Unied Kingdom Pearson Education Limited.

Johnson, M. W., Christensen, C. M., & Kagermann, H. (2008). Reinventing Your Business Model. *Harvard Business Review, 86*(12).

Jones, N. A., Ross, H., Lynam, T., Perez, P., & Leitch, A. (2011). Mental Models: An Interdisciplinary Synthesis of Theory and Methods. *Ecology and Society, 16*(1), 1-46. doi:10.5751/ES-03802-160146

Jong, J. P. D., & Hartong, D. N. D. (2007). How leaders influence employees' innovative behaviour. *European Journal of Innovation Management, 10*(1), 41-64. doi:https://doi.org/10.1108/14601060710720546

Kahneman, D. (2003). Maps of bounded rationality: Psychology for behavioral economics. *American Economic Review, 93*, 1449-1475.

Kahneman, D. (2011). *Thinking Fast and Slow*. New York: Farrar, Staus and Giroux.

Kahneman, D., Knetsch, J. L., & Thaler, R. H. (1991). Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias. *Journal of Economic Perspectives, 5*(1), 193-206. doi:doi:10.1257/jep.5.1.193

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of Decision under Risk. *Econometrica, 47*(2), 263-292.

Kane, G. C. (2017). Digital Transformation' Is a Misnomer. In M. S. M. Review (Ed.), (Vol. 2017). MIT Sloan Management Review: Massachusetts Institute of Technology.

Kaplan, S. (2008). Cognition, Capabilities, and Incentives: Assessing Firm Responsible to The Fiber-Optic Revolution. *Academy of Management Journal, 51*(4), 672-695. doi:10.5465/AMJ.2008.33665141

Kaplan, S., Murray, F., & Henderson, R. (2003). Discontinuities and senior management: assessing the role of recognition in pharmaceutical firm response to biotechnology. *Industrial and Corporate Change, 12*(2), 203-233. doi:10.1093/icc/12.2.203

Kelly, S. J., Benseman, J., Bhide, V., Eweje, G., Imbeau, J., Scott, J., . . . Warren, L. (2017). *Disruptive Technology in The Agri-Food Sector*. Retrieved from Massey University:

Kerlinger, F. N., & Lee, H. B. (1999). *Foundations of Behavioral Research* (4th edition ed.): Wadsworth Publishing.

Krippendorff, K. (2013). *Content Analysis - An introduction to its methodology* (Vol. 3). Thousand Oaks: Sage Publications.

Kruger, J., & Dunning, D. (1999). Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology, 77*(6), 1121-1134. doi:http://dx.doi.org/10.1037/0022-3514.77.6.1121

Lambert, S. C., & Davidson, R. A. (2013). Applications of the business model in studies of enterprise success, innovation and classification: An analysis of empirical research from 1996 to 2010. *European Management Journal, 31*(6), 668-681. doi:https://doi.org/10.1016/j.emj.2012.07.007

Lant, T. K., & Mezias, S. J. (1992). An Organizational Learning Model of Convergence And Reorientation. *Organization Science, 3*(1), 47-71.

Lerøy Seafood Group. (2011). Annual Report 2011. Retrieved from https://www.leroyseafood.com/globalassets/02-documents/rapporter/arsrapporter/arsrapport2011.pdf

Lerøy Seafood Group. (2012). Annual Report 2012. Retrieved from https://www.leroyseafood.com/globalassets/02-documents/rapporter/arsrapporter/arsrapport2012.pdf

Lerøy Seafood Group. (2013). Annual Report 2013. Retrieved from https://www.leroyseafood.com/globalassets/02-documents/rapporter/arsrapporter/arsrapport2013.pdf

Lerøy Seafood Group. (2014). Annual Report 2014. Retrieved from https://www.leroyseafood.com/globalassets/02-documents/rapporter/arsrapporter/arsrapport2014.pdf

Lerøy Seafood Group. (2015). Annual Report 2015. Retrieved from https://www.leroyseafood.com/globalassets/02-documents/rapporter/arsrapporter/arsrapport2015.pdf

Lerøy Seafood Group. (2016). Annual Report 2016. Retrieved from https://www.leroyseafood.com/globalassets/02-documents/rapporter/arsrapporter/arsrapport2016.pdf

Lerøy Seafood Group. (2018). About Lerøy. Retrieved from https://www.leroyseafood.com/en/about-us/about-leroy/

Linder, J. C., & Cantrell, S. (2000). *Changing Business Models: Surveying theLandscape*. Retrieved from Accenture:

LinkedIn. (2018a). Atle Harald Sandtorv - Curriculum Vitae. Retrieved from https://www.linkedin.com/in/atle-harald-sandtorv-a4316219/

LinkedIn. (2018b). Charles Høstlund - Curriculum Vitae. Retrieved from https://www.linkedin.com/in/charles-h%C3%B8stlund-b6a31169/

LinkedIn. (2018c). John Binde - Curriculum Vitae. Retrieved from https://www.linkedin.com/in/john-binde-98862351/

LinkedIn. (2018d). Morten Vike - Curriculum Vitae. Retrieved from https://www.linkedin.com/in/morten-vike-a08a604/

LinkedIn. (2018e). Trond Williksen - Curriculum Vitae. Retrieved from https://www.linkedin.com/in/trond-williksen-76111ab/?ppe=1

LinkedIn. (2018f). Yngve Myhre - Curriculum Vitae. Retrieved from https://www.linkedin.com/in/yngve-myhre-0014b21/

Liu, D.-Y., Chen, S.-W., & Chou, T.-C. (2011). Resource fit in digital transformation: Lessons learned from the CBC Bank global e-banking project. *Management Decision, 49*(10), 1728-1742. doi:doi:10.1108/00251741111183852

López-Muñoz, J. F., & Escribá-Esteve, A. (2017). An upper echelons perspective on information technology business value. *European Research on Management and Business Economics, 23*, 173-181.

Lorange, P., & Fjeldstad, Ø. D. (2012). New Business Models and Strategies in Shipping. In W. K. Talley (Ed.), *The Blackwell Companion to Maritime Economics* (pp. 263-280): Blackwell Publishing Ltd.

MacKenzie, S. B. (2003). The dangers of poor construct conceptualization. *Journal of Academy of Marketing Science, 31*(3), 323-326.

Magretta, J. (2002). Why business models matter. *Harvard Business Review, 80*(5), 86-92, 133.

Marine Harvest. (2011). Annual Report 2011. Retrieved from http://hugin.info/209/R/1608160/510268.pdf

Marine Harvest. (2012). Annual Report 2012. Retrieved from http://hugin.info/209/R/1696633/558857.pdf

Marine Harvest. (2013). Annual Report 2013. Retrieved from http://hugin.info/209/R/1781099/609198.pdf

Marine Harvest. (2014). Annual Report 2014. Retrieved from http://hugin.info/209/R/1915630/684760.pdf

Marine Harvest. (2015). Annual Report 2015. Retrieved from http://hugin.info/209/R/1999866/737534.pdf

Marine Harvest. (2016). Annual Report 2016. Retrieved from http://hugin.info/209/R/2094101/791700.pdf

Marine Harvest. (2018). About. Retrieved from http://marineharvest.com/about/in-brief/

Markides, C. (2006). Disruptive Innovation: In Need of Better Theory. *Journal of Product Innovation Management, 23*(11), 19-25. doi:10.1111/j.1540-5885.2005.00177.x

Markides, C., & D., C. C. (2004). Competing with dual business models: A contingency approach. *Academy of Management Executive, 18*(3), 22-36.

Massa, L., Tucci, C., & Afuah, A. (2016). A Critical Assessment of Business Model Research. *Academy of Management Annals*. doi:https://dx.doi.org/10.0.21.89/annals.2014.0072

Matzler, K., Bailom, F., von den Eichen, S. F., & Kohler, T. (2013). Business model innovation: coffee triumphs for Nespresso. *Journal of Business Strategy, 34*(2), 30-37. doi:doi:10.1108/02756661311310431

Miles, R. E., Snow, C. C., Meyer, A. D., & Coleman, H. J. (1978). Organizational Strategy, Structure, and Process. *The Academy of Management Review, 3*(3), 546-562. doi:10.2307/257544

Miller, D. (1986). Configurations of strategy and structure: Towards a synthesis. *Strategic Management Journal, 7*(3), 233-249. doi:10.1002/smj.4250070305

Mintzberg, H. (1987). Crafting strategy. *Strategic Planning,* (July 1987 Issue). Retrieved from https://hbr.org/1987/07/crafting-strategy

Mintzberg, H. (1994). *Rise and Fall of Strategic Planning*. New York: Free Press.

Mintzberg, H., Raisinghani, D., & Théorêt, A. (1976). The Structure of "Unstructured" Decision Processes. *Administrative Science Quarterly, 21*(2), 246-275. doi:10.2307/2392045

Mitchell, D. W., & Coles, C. B. (2004). Establishing a continuing business model innovation process. *Journal of Business Strategy, 25*(3), 39-49. doi:https://doi.org/10.1108/02756660410536991

Mohammed, S., Ferzandi, L., & Hamilton, K. (2010). Metaphor No More: A 15-Year Review of the Team Mental Model Construct. *Journal of Management, 36*(4), 876-910. doi:10.1177/0149206309356804

Molineux, P. (2002). Creating customer value. *Spectra - The Journal of the Management Consultancies Association, Summer*, 19-23.

Moore, G. E. (1965). Cramming more components onto integrated circuits. *Electronics, 38*(8).

Morris, M., Schindehutte, M., & Allen, J. (2005). The entrepreneur's business model: toward a unified perspective. *Journal of Business Research, 58*(6), 726-735. doi:https://doi.org/10.1016/j.jbusres.2003.11.001

Narayanan, V. K., Zane, L. J., & Kemmerer, B. (2011). The Cognitive Perspective in Strategy: An Integrative Review. *Journal of Management, 37*(1), 305-351. doi:10.1177/0149206310383986

Nenonen, S., & Storbacka, K. (2010). Business model design: conceptualizing networked value co-creation. *International Journal of Quality and Service Sciences, 2*(1), 43-59. doi:doi:10.1108/17566691011026595

Neus, A., Buder, F., & Galdino, F. (2017). Are You Too Successful to Digitalize? How to Fight Innovation Blindness. *Gfk MIR, 9*(1), 31-35. doi:doi 10.1515

Nielsen, S. (2010). Top Management Team Diversity: A Review of Theories and Methodologies. *International Journal of Management Reviews, 12*(3), 301-316. doi:10.1111/j.1468-2370.2009.00263.x

Norway Royal Salmon. (2011). Annual Report 2011. Retrieved from https://norwayroyalsalmon.com/files/9/aarsrapport_nrs2011.pdf

Norway Royal Salmon. (2012). Annual Report 2012. Retrieved from https://norwayroyalsalmon.com/files/9/aarsrapport_nrs2012.pdf

Norway Royal Salmon. (2014). Annual Report 2014. Retrieved from https://norwayroyalsalmon.com/files/9/NRS_Aarsrapport_2014.pdf

Norway Royal Salmon. (2015). Annual Report 2015. Retrieved from https://norwayroyalsalmon.com/files/9/NRS_Aarsrapport2015.pdf

Norway Royal Salmon. (2016). Annual Report 2016. Retrieved from https://norwayroyalsalmon.com/files/9/NRS_Aarsrapport2016.pdf

Norway Royal Salmon. (2018). About NRS. Retrieved from https://norwayroyalsalmon.com/en/About-NRS/History

Norwegian Seafood Council. (2018a). Nøkkeltall. Retrieved from https://nokkeltall.seafood.no/

Norwegian Seafood Council. (2018b). Seafood exports worth record-high NOK 94.5 billion in 2017. Retrieved from https://en.seafood.no/news-and-media/news-archive/seafood-exports-worth-record-high-nok-94.5-billion-in-2017/

Novemsky, N., & Kahneman, D. (2005). The Boundaries of Loss Aversion. *Journal of Marketing Research, 42*(2), 119-128. doi:10.1509/jmkr.42.2.119.62292

Ocasio, W. (1995). The enactment of economic adversity: A reconciliation of theories of failure-induced change and threat-rigidity. *Research in Organizational Behavior, 17*, 287-331.

Ocasio, W. (1997). Towards an Attention-Based View of the Firm. *Strategic Management Journal, 18*, 187-206.

OECD. (2017). *OECD Science, Technology and Industry Scoreboard 2017: The digital transformation*. Retrieved from Paris:

Osterwalder, A., & Pigneur, Y. (2010). *Business Model Generation* (A. Sjøbu, Trans. 1 ed.). Oslo: Gyldendal Norsk Forlag AS.

Osterwalder, A., Pigneur, Y., & Tucci, C. L. (2005). Clarifying Business Models: Origins, Present, and Future of the Concept. *Communications of the Association for Information Systems, 16*(1).

Patton, M. Q. (2002). *Qualitative Research and Evaluation Methods*. Thousand Oaks, CA: Sage.

Patzelt, H., Zu Knyphausen-Aufseß, D., & Nikol, P. (2008). Top Management Teams, Business Models, and Performance of Biotechnology Ventures: An Upper Echelon Perspective*. *British Journal of Management, 19*(3), 205-221. doi:10.1111/j.1467-8551.2007.00552.x

Plambeck, E. L., & Taylor, T. A. (2005). Sell the Plant?The Impact of Contract Manufacturing on Innovation, Capacity, and Profitability. *Management Science, 51*(1), 133-150. doi:10.1287/mnsc.1040.0212

Pohle, G., & Chapman, M. (2006). IBM's global CEO report 2006: business model innovation matters. *Strategy & Leadership, 34*(5), 34-40. doi:doi:10.1108/10878570610701531

Polit, D. F., & Beck, C. T. (2006). *Essentials of Nursing Research: appraising evidence for nursing practive*. Philadelphia, PA: Lippincott Williams & Wilkins.

Porac, J. F., Thomas, H., & Baden-Fuller, C. (1989). Competitive Groups as Cognitive Communities: The Case of Scottish Knitwear Manufacturers. *Journal of Management Studies, 26*(4), 397-416. doi:10.1111/j.1467-6486.1989.tb00736.x

Porac, J. F., Thomas, H., Wilson, F., Paton, D., & Kanfer, A. (1995). Rivalry and the Industry Model of Scottish Knitwear Producers. *Administrative Science Quarterly, 40*(2), 203-227. doi:10.2307/2393636

Porter, M. (1980). *Competitive strategy: Techniques for analyzing industries and competitors*. New York: Free Press.

Porter, M. (1990). Competitive Advantage of Nations. *Competitive Intelligence Review, 1*(1), 14-14. doi:10.1002/cir.3880010112

Porter, M. E. (1985). Technology and Competitive Advantage. *Journal of Business Strategy, 5*(3), 60-78. doi:doi:10.1108/eb039075

Prahalad, C. K. (2004). The Blinders of Dominant Logic. *Long Range Planning, 37*(2), 171-179. doi:https://doi.org/10.1016/j.lrp.2004.01.010

Prahalad, C. K., & Bettis, R. A. (1986). The dominant logic: A new linkage between diversity and performance. *Strategic Management Journal, 7*(6), 485-501. doi:10.1002/smj.4250070602

PwC. (2017a). *A decade of digital: Keeping pace with transformation*. Retrieved from PriceWaterhouseCoopers: https://www.pwc.com/ee/et/publications/pub/pwc-digital-iq-report.pdf

PwC. (2017b). *Industry 4.0: What we mean by Industry 4.0* Retrieved from www.pwc.com: https://www.pwc.com/gx/en/industries/industry-4.0/what-we-mean.html

PwC. (2017c). *Sustainable growth towards 2050 - PwC Seafood Barometer 2017*. Retrieved from https://www.pwc.no/no/publikasjoner/shipping/PwC-Seafood%20Barometer_Web_V01.pdf

PwC. (2017d). What we mean by Industry 4.0. Retrieved from https://www.pwc.com/gx/en/industries/industry-4.0/what-we-mean.html

Quttainah, M. A. (2015). Upper Echelon Theory: Role of Community and Strategy. *Expert Journal of Business and Management, 3*(2), 171-181.

Ramírez, R. (1999). Value co-production: intellectual origins and implications for practice and research. *Strategic Management Journal, 20*(1), 49-65. doi:doi:10.1002/(SICI)1097-0266(199901)20:1<49::AID-SMJ20>3.0.CO;2-2

Reger, R. K., & Palmer, T. B. (1996). Managerial Categorization of Competitors: Using Old Maps to Navigate New Environments. *Organization Science, 7*(1), 22-39. doi:10.1287/orsc.7.1.22

Remenyi, D., Williams, B., Money, A., & Swartz, E. (2002). *Doing Research in Business and Management*. London: SAGE Publications.

Reuters. (2018). Andreas Kvamme - Curriculum Vitae. Retrieved from https://www.reuters.com/finance/stocks/officer-profile/GSFO.OL/2579406

Richter, C. (2008). *Bounded Rationality in Economics and Finance*. Münster, Germany: LIT Verlag.

Roese, N. J., & Vohs, K. D. (2012). Hindsight Bias. *Perspectives on Psychological Science, 7*(5), 411-426. doi:10.1177/1745691612454303

Rumelt, R. P. (2011). *Good strategy, bad strategy: The difference and why it matters*. New York: Crown Business.

Saebi, T. (2014). Business Model Evolution, Adaptation or Innovation? A Contingency Framework on Business Model Dynamics, Environmental Change and Dynamic Capabilities. *Business Model Innovation: The Organizational Dimension, Nicolai J Foss & Tina Saebi, eds*.

Saebi, T. (2016). Fremtiden for forretningsmodellinnovasjon i Norge. Retrieved from https://www.magma.no/fremtiden-for-forretningsmodellinnovasjon-i-norge

Saebi, T., & Foss, N. J. (2015). Business models for open innovation: Matching heterogeneous open innovation strategies with business model dimensions. *European Management Journal, 33*(3), 201-213. doi:https://doi.org/10.1016/j.emj.2014.11.002

Saebi, T., Lien, L., & Foss, N. J. (2017). What Drives Business Model Adaptation? The Impact of Opportunities, Threats and Strategic Orientation. *Long Range Planning, 50*(5), 567-581. doi:https://doi.org/10.1016/j.lrp.2016.06.006

Saebi, T., & Singh, K. A. (2016). *The State Of Business Model Innovation In Norway*. Retrieved from Bergen, Norway: https://www.nhh.no/globalassets/centres/csi/pdfs/the-state-of-business-model-innovation-1-1-2017.pdf

Salaman, G. (2001). *Decision-making for business*. London, UK: Sage Publications Ltd.

SalMar. (2011). Annual Report 2011. Retrieved from http://hugin.info/138695/R/1607522/559614.pdf

SalMar. (2012). Annual Report 2012. Retrieved from http://hugin.info/138695/R/1697772/559610.pdf

SalMar. (2013). Annual Report 2013. Retrieved from http://hugin.info/138695/R/1781478/609515.pdf

SalMar. (2014). Annual Report 2014. Retrieved from http://hugin.info/138695/R/1917404/685879.pdf

SalMar. (2015). Annual Report 2015. Retrieved from http://hugin.info/138695/R/2008392/742847.pdf

SalMar. (2016). Annual Report 2016. Retrieved from http://hugin.info/138695/R/2099114/799620.pdf

SalMar. (2018). About SalMar. Retrieved from https://www.salmar.no/en/about-salmar/

Santos, J., Spector, B., & Heyden, L. V. d. (2009). *Toward a Theory of Business Model Innovation within Incumbent Firms*. Retrieved from Fontainebleau, France: https://pdfs.semanticscholar.org/522f/b6779e20372f315f2072aafc1d313a850041.pdf

Sapir, E. (1944). Grading, A Study in Semantics. *Philosophy of Science, 11*(2), 93-116. doi:10.1086/286828

Saunders, M., Lewis, P., & Thornhill, A. (2012). *Research methods for business student* (6th edition ed.). Harlow: Pearson.

Schneider, S., & Spieth, P. (2013). Business Model Innovation: Towards An Integrated Future Research Agenda. *Journal of Innovation Management, 17*(1), 34. doi:10.1142/S136391961340001X

Schwenk, C. R. (1984). Cognitive simplification processes in strategic decision-making. *Strategic Management Journal, 5*(2), 111-128. doi:10.1002/smj.4250050203

Shafer, S. M., Smith, H. J., & Linder, J. C. (2005). The power of business models. *Business Horizons, 48*(3), 199-207. doi:https://doi.org/10.1016/j.bushor.2004.10.014

Shapiro, C., & Varian, H. (1999). *Information Rules: A Strategic Guide to the Network Economy*. Boston, MA: Harvard Business School Press.

Simon, H. A. (1955). A Behavioral Model of Rational Choice. *Quarterly Journal of Economics, 69*, 99-118.

Skjølsvik, T., Løwendahl, B. R., Kvålshaugen, R., & Fosstenløkken, S. M. (2007). Choosing to Learn and Learning to Choose: Strategies for Client Co-Production and Knowledge Development. *California Management Review, 49*(3), 110-128. doi:10.2307/41166397

Snow, C. C., Fjeldstad, Ø. D., & Langer, A. M. (2017). Designing the digital organization. *Journal of Organizational Design, 6*(7), 1-13. doi:10.1186/s41469-017-0017-y

Snow, C. C., Fjeldstad, Ø. D., Lettl, C., & Miles, R. E. (2011). Organizing Continuous Product Development and Commercialization: The Collaborative Community of Firms Model.

Journal of Product Innovation Management, 28(1), 3-16. doi:10.1111/j.1540-5885.2010.00777.x

Sosna, M., Trevinyo-Rodríguez, R. N., & Velamuri, S. R. (2010). Business Model Innovation through Trial-and-Error Learning: The Naturhouse Case. *Long Range Planning, 43*(2), 383-407. doi:https://doi.org/10.1016/j.lrp.2010.02.003

SSB. (2017). ICT usage in households. Retrieved from https://www.ssb.no/en/teknologi-og-innovasjon/statistikker/ikthus

SSB. (2018). External trade in goods. Retrieved 31.02.2018, from Statistics Norway

Stabell, C. B., & Fjeldstad, Ø. D. (1998). Configuring Value for Competitive Advantage: On Chains, Shops, and Networks. *Strategic Management Journal, 19*, 413-437.

Staw, B. M., Sandelands, L. E., & Dutton, J. E. (1981). Threat Rigidity Effects in Organizational Behavior: A Multilevel Analysis. *Administrative Science Quarterly, 26*(4), 501-524. doi:10.2307/2392337

Stigliani, I., & Ravasi, D. (2012). Organizing Thoughts and Connecting Brains: Material Practices and the Transition from Individual to Group-level Prospective Sensemaking. *Academy of Management Journal, 55*(5), 1232-1259. doi:10.5465/amj.2010.0890

Taran, Y., Boer, H., & Lindgren, P. (2015). A business model innovation typology. *Decision Sciences, 46*(2), 301-331. doi:DOI: 10.1111/deci.12128

Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal, 28*(13), 1319-1350. doi:10.1002/smj.640

Teece, D. J. (2010). Business Models, Business Strategy and Innovation. *Long Range Planning, 43*, 172-194. doi:doi:10.1016/j.lrp.2009.07.003

Teece, D. J. (2017). Business models and dynamic capabilities. *Long Range Planning*, 1-10. doi:http://dx.doi.org/10.1016/j.lrp.2017.06.007

Thagaard, T. (2009). *Systematikk og innlevelse: en innføring i kvalitativ metode* (3 utgave ed.). Bergen: Fagbokforlaget.

Thaler, R. H. (1985). Mental Accounting and Consumer Choice. *Marketing Science, 4*(3), 199-214.

Thomas, J. B., Clark, S. M., & Gioia, D. A. (1993). Strategic Sensemaking and Organizational Performance: Linkages Among Scanning, Interpretation, Action, and Outcomes. *Academy of Management Journal, 36*(2), 239-270. doi:10.2307/256522

Thompson, J. D. (1967). *Organizations in Action: Social Science Bases of Administrative Theory*: Transaction Publishers.

Tikkanen, H., Lamberg, J.-A., Parvinen, P., & Kallunki, J.-P. (2005). Managerial cognition, action and the business model of the firm. *Management Decision, 43*(6), 789-809. doi:https://doi.org/10.1108/00251740510603565

Timmers, P. (1998). Business models for electronic markets. *Electronic Markets, 8*(2), 3-8.

Ting, I. W. K., Azizan, N. A. B., & Kweh, Q. L. (2015). Upper Echelon Theory Revisited: The Relationship between CEO Personal Characteristics and Financial Leverage Decision. *Procedia - Social and Behavioral Sciences, 195*, 686-694. doi:https://doi.org/10.1016/j.sbspro.2015.06.276

Tripsas, M., & Gavetti, G. (2000). Capabilities, Cognition, and Inertia: Evidence from Digital Imaging. *Strategic Management Journal, 21*(10/11), 1147-1161.

Tsai, C.-Y., Lin, J. L., & Fang, S.-C. (2008). *The paradox of threat and organizational intertia*. Paper presented at the International Conference on Business and Information.

Tsai, H.-F., & Luan, C.-J. (2016). What makes firms embrace risks? A risk-taking capability perspective. *BRQ Business Research Quarterly, 19*(3), 219-231. doi:https://doi.org/10.1016/j.brq.2016.01.002

Tversky, A. (1995). The Psychology of Decision Making. *AIMR Conference Proceedings, 1995*(7), 2-6. doi:10.2469/cp.v1995.n7.2

Tversky, A., & Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and Biases. *Science, 185*(4157), 1124-1131.

Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science, 211*(4481), 453.

Tversky, A., & Kahneman, D. (1986). Rational Choice and the Framing of Decisions. *The Journal of Business, 59*(4), 251-278.

Tversky, A., & Kahneman, D. (1992). Advances in Prospect Theory: Cumulative Representation of Uncertainty. *Journal of Risk and Uncertainty, 5*, 297-323.

Varian, H. (2000). Buying, Sharing and Renting Information Goods. *The Journal of Industrial Economics, 48*(4), 473-488. doi:doi:10.1111/1467-6451.00133

Venkatraman, N., & Henderson, J. C. (1998). Real strategies for virtual organizing. *Sloan Management Review, 40*(1), 33-48.

Voelpel, S., Leibold, M., Tekie, E., & von Krogh, G. (2005). Escaping the Red Queen Effect in Competitive Strategy:: Sense-testing Business Models. *European Management Journal, 23*(1), 37-49. doi:https://doi.org/10.1016/j.emj.2004.12.008

von den Eichen, S. F., Freiling, J., & Matzler, K. (2015). Why business model innovations fail. *Journal of Business Strategy, 36*(6), 29-38. doi:doi:10.1108/JBS-09-2014-0107

Vorbach, S., Wipfler, H., & Schimpf, S. (2017). Business Model Innovation vs. Business Model Inertia: the Role of Disruptive Technologies. *BHM Berg- und Hüttenmännische Monatshefte, 162*(9), 382-385. doi:10.1007/s00501-017-0671-y

Weber, R. (1990). *Basis Content Analysis* (n. edition Ed.). Thousand Oaks, CA: Sage Publications.

Weick, K. E. (1995). *Sensemaking in Organizations*. Thousand Oaks: SAGE Publications.

Westerman, G., Bonnet, D., & McAfee, A. (2014). *Leading Digital: Turning Technology Into Business Transformation*. Boston, MA: Harvard Business Review Press.

Whorf, B. L. (1956). *Language, Thought, and Reality Selected Writings of Benjamin Lee Whorf* (J. B. Carroll, S. C. Levinson, & P. Lee Eds.): MIT Press.

Winter, S. G., & Szulanski, G. (2001). Replication as Strategy. *Organization Science, 12*(6), 730-743. doi:10.1287/orsc.12.6.730.10084

Young, I. (2008). *Mental Models: Aligning design strategy with human behavior* (K. Whitehouse Ed.). Brooklyn, NY: Rosenfeld Media.

Zhang, Y., & Wildemuth, B. M. (n.a.). *Qualitative Analysis of Content*. Retrieved from https://www.ischool.utexas.edu/~yanz/Content_analysis.pdf

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2009). *Business Research Methods* (Eighth Edition ed.). Mason, Ohio: Cengage Learning.

Zott, C., & Amit, R. (2007). Business Model Design and the Performance of Entrepreneurial Firms. *Organization Science*, *18*(2), 181-199. doi:https://doi.org/10.1287/orsc.1060.0232

Zott, C., & Amit, R. (2008). The fit between product market strategy and business model: implications for firm performance. *Strategic Management Journal*, *29*(1), 1-26. doi:10.1002/smj.642

Zott, C., & Amit, R. (2010). Business Model Design: An Activity System Perspective. *Long Range Planning*, *43*(2), 216-226. doi:https://doi.org/10.1016/j.lrp.2009.07.004

Zott, C., Amit, R., & Massa, L. (2011). The Business Model: Recent Developments and Future Research. *Journal of Management*, *37*(4), 1019-1042. doi:https://doi-org.ezproxy.uis.no/10.1177/0149206311406265

Appendix

Appendix 1 – Content analysis planning and checklist

Checklist	Y/N
Have you clearly defined your research question?	Y
Is the population of documents to be content analyzed relevant to your research question	Y
Can you justify your sampling approach?	Y
Have you made sure that your dimensions do not overlap?	Y
Have you made sure that the categories used for each of your dimensions do not overlap?	Y
Do all the dimensions allow you to answer your research question?	Y
Have you piloted your coding schedule?	Y
Are the coding instructions clear?	Y
If your research is based on the mass media, can you justify the time span of your coverage?	N/A
Are you clear about the unit of analysis?	Y

Table 32 - Checklist for doing content analysis (Adapted from Bryman & Bell, 2011, p. 309)

Appendix 2 – Aquaculture companies

Marine Harvest (adapted from Marine Harvest, 2018)

Marine Harvest is the world's largest producer of Atlantic salmon. The company employs over 12.000 employees and harvested more than 381.000 tons of salmon in 2016. The company has a global presence with localities in 24 different countries (including Norway, Chile and Canada) and headquarter located in Bergen, Norway. Marine Harvest provides products to more than 70 markets in Europe, Asia and America. The company is listed among the ten largest companies on the Oslo Stock Exchange with a turnover of 34 billion NOK in 2016.

Lerøy Seafood Group (adapted from Lerøy Seafood Group, 2018)

Based on its production volume, Lerøy Seafood Group is identified as the second largest producers of Atlantic salmon in the world. The core business of Lerøy Seafood Group includes farming and fishery of salmon, trout and whitefish. The company employs more than 3.8000 employees globally and is headquartered in Bergen, Norway. While the firm's aquaculture and fishery operations are located in Norway, their processing and sales operation reach from Norway to Japan. The company provides products to more than 80 different markets. In 2016, Lerøy Seafood Group reported more than NOK 17.2 billion in revenues and listed as one of the largest companies on the Oslo Stock Exchange.

SalMar (adapted from SalMar, 2018)

SalMar is recognized as the fourth largest producer of Atlantic salmon based on its production volume. The company's main operation is located in Norway where the company operate more than 100 licenses. SalMar currently employs approximately 1000 employees and the headquarter is located in Frøya, Norway. The company's core-business are alongside the farming operation, its secondary processing facility. In 2016 the firm produced more than 131.000 tons of Atlantic salmon and had operational revenue of more than NOK 9 billion. SalMar is listed on the Oslo Stock Exchange.

Grieg Seafood (adapted from Grieg Seafood, 2018)

Grieg Seafood is identified as one of the largest aquaculture companies in the world. The company has a global presence with production facilities in Canada, Norway and United Kingdom and employs more than 700 people. The headquarter is located in Bergen, Norway.

Grieg Seafood has an annual production capacity of approximately 90.000 tonnes and is listed on the Oslo Stock Exchange.

Norway Royal Salmon (adapted from Norway Royal Salmon, 2018)

Norway Royal Salmon was established as an alliance with 34 independent salmon farmers with the intent of building a robust sales and marketing company that leveraged on the resources from the respective firms. Since 2006 Norway Royal Salmon has transformed the company from being a sales and marketing company to becoming an independent salmon farming company. The sales and marketing alliance is still a large entity within the organization and annually, Norway Royal Salmon sell more than 70.000 tonnes of Atlantic salmon, compared to their own harvested salmon accounts for approximately 25.000 tonnes. The headquarter is located in Trondheim, Norway. Norway Royal Salmon is listed on the Oslo Stock Exchange.