



Norwegian University of  
Science and Technology

# Business models in the maritime industry

A study of how Norwegian maritime actors  
apply and innovate their business models

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# PROBLEM DESCRIPTION

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In this master thesis, we wish to study the maritime industry's relation to business models and business model innovations. We will study how Norwegian maritime actors apply and innovate their business models and whether these approaches can be linked to profitability.

Assignment given: 15 January 2016

Supervisor: Øystein Moen, IØT



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# PREFACE

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This master thesis was written in the spring of 2016 as the final work of our M.Sc. degree in Industrial Economics and Technology Management, NTNU. It is a part of our specialization in Strategy and International Business Development. The aim of this thesis is to understand how Norwegian maritime actors apply and innovate their business models, and whether these approaches can be linked to profitability. We based the thesis on relevant academic literature and a case study of Norwegian maritime actors. We would like to thank our case companies for their participation and useful contribution to our study; Wilh. Wilhelmsen ASA, Fred. Olsen & Co, Ulstein Group AS, Kongsberg Maritime AS and Erling Haug AS. We would also like to thank the Norwegian Shipowners' Association for their helpful contributions. Lastly, we would like to thank our academic supervisor, Øystein Moen, for valuable guidance and feedback throughout this work.

Trondheim, 9 June 2016

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# EXECUTIVE SUMMARY

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An IBM survey from 2006 revealed that firms focusing on business model innovation exceeded their competitors in operating margin by five percent. The relevance of business model innovation can be regarded as interesting for maritime firms as the maritime industry is faced with continuous pressure for realignment. This thesis' research question therefore sought to answer how Norwegian maritime actors apply and innovate their business models, and whether these approaches can be linked to profitability.

To answer this, a comprehensive industry and literature review was conducted. The maritime industry review was used to provide an overview of the industry's characteristics and the dynamics between its actors. The literature review consisted of two main building blocks; theories of the business model concept and theories of business model innovation. Based on the mentioned reviews, a framework was developed, where expectations to findings were presented. This framework have enabled the research question to be answered.

In this thesis, a case study has constituted the primary source of empirical evidence. The case study included five Norwegian maritime actors. The case actors represents different parts of the industry; shipping, shipyards and maritime equipment suppliers. Quantitative data and data from secondary sources have been additional empirical sources.

It has been found that value propositions, profit/revenue generation and value chain architecture are recurring components in the case actors' business model definitions. In general, there still exists uncertainty regarding the content of the business model concept in the maritime business. The finding that two out of five case actors do not have a significant relation to their business model might illustrate this. As for the utilization of the business model, only one case actor uses their business model as a separated term in their strategic operations. With regards to how maritime actors innovate their business models, the case actors to a small extent use open networks as a source of innovation. There also seems to be a division between business model innovator strategies among the maritime actors, where two actors were considered incremental and two were seen as radical. A vague link has also been drawn between ideal business model innovation strategies and profitability.

This thesis has contributed with significant findings in the interface between the maritime industry and the fields of business models and business model innovations. Theoretical representations of business models in literature has shown to be relevant in practice. The thesis has also revealed a gap in the literature regarding a clear and tangible link between business model innovation and profitability. Lastly, it has been disproven that the same factors that enable Norwegian maritime actor's realignment abilities enable business model innovations.





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# SAMMENDRAG

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En undersøkelse utført av IBM i 2006 viste at bedrifter som fokuserte på innovasjoner av forretningsmodellen overgikk deres konkurrenter på driftsmargin med fem prosent. Relevansen av innovasjoner av forretningsmodellen kan derfor anses som interessant for maritime bedrifter da den maritime industrien står overfor et kontinuerlig omstillingspress. Denne masteroppgaven søkte derfor svar på hvordan norske maritime bedrifter benytter seg av og innoverer sine forretningsmodeller, og om disse tilnærmingene kan knyttes til lønnsomhet.

For å besvare dette ble en omfattende industri- og litteraturgjennomgang gjennomført. En gjennomgang av den maritime industrien ble benyttet for å gi en oversikt over industriens karakteristikk samt å forstå dynamikken mellom aktørene. Litteraturgjennomgangen bestod av to hoveddeler; teorier om forretningsmodellkonseptet og teorier om innovasjon av forretningsmodeller. Basert på disse gjennomgangene ble et rammeverk utviklet hvor forventninger til senere funn ble presentert.

Et case-studie har utgjort den primære kilden til empiri i denne masteroppgaven. Case-studiet besto av fem norske maritime aktører. Aktørene representerte ulike deler av industrien; shipping, verft og maritime utstyrsleverandører. Kvantitative data og data fra sekundærkilder er også benyttet som empiriske kilder.

Det ble funnet at kundetilbud (value proposition), lønnsomhetsgenerering (profit/revenue generation) og verdikjedearkitektur (value chain architecture) var gjennomgående komponenter i case-aktørenes fremstillinger av deres forretningsmodell. Generelt så finnes det usikkerhet blant maritime aktører angående hva som er det konkrete innholdet i et forretningsmodellkonsept. Funnet som viser at to ut av fem case-aktører ikke har en signifikant relasjon til sin forretningsmodell kan illustrere dette. Når det gjelder bruken av forretningsmodellbegrepet, ble det funnet at kun én maritim aktør bruker begrepet som et selvstendig begrep i sine strategiske operasjoner. Angående hvordan aktørene innoverer sine forretningsmodeller, viser det seg at aktørene i liten grad bruker åpne nettverk som en kilde til innovasjon. Det synes også å være en oppdeling mellom strategier om innovasjoner av forretningsmodeller, da to aktører ble identifisert til å være inkrementelle og to ble sett på som radikale. En svak kobling har også blitt trukket mellom ideelle strategier for innovasjon av forretningsmodeller og lønnsomhet.

Denne masteroppgaven har bidratt med signifikante funn i skjæringspunktet mellom den maritime industrien og feltene som omhandler forretningsmodeller samt innovasjon av disse. De teoretiske representasjonene av forretningsmodeller har vist seg å være relevante i praksis. Masteroppgaven har også avdekket et område i litteraturen som mangler en klar og håndfast link mellom innovasjoner av forretningsmodeller og lønnsomhet. Til slutt, omstillingsevnene til norske maritime aktører er i liten grad basert på innovasjoner av deres forretningsmodeller.



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# 1. INTRODUCTION

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In this section, we will present the background for our choice of research topic, our research question and the structure of the thesis.

## 1.1. Background

Norway is one of the world's leading maritime nations (Maritime Outlook 2016, 2016) and the country has long traditions for maritime activities. Maritime activities contribute with more than one third of Norwegian export (Jakobsen et al., 2015) and the country controls the world's 6th largest fleet, when measured in value (Thomassen, 2016). In addition to this, Norway is also considered one of the few nations worldwide to hold a complete maritime cluster (Maritime Outlook 2016, 2016). According to Thomassen (2016) at the Norwegian Shipowners' Association, the competence ecology, local and dedicated owners, access to capital, the complete Norwegian cluster, collaboration across maritime actors and the flat structure characterizing Norwegian actors contribute to a unique adaptability for the maritime companies in Norway. Thomassen (2016) further argues that the strong connection between the owner and the firm is beneficial for achieving innovations. Firms with the same ownership throughout generations have a long term perspective and feel committed to their business to a larger degree than other firm owners, he argues. The additional nurturing culture between firms is also prevalent.

The maritime industry is a global industry and is highly influenced by the situation in the world economy (Stopford, 2009). It is consequently faced with a continuous pressure for realignment in order to survive. Changing trade patterns and world demography has however weakened the link between sea trade and the world economy (Melbye et al., 2016). Combined with stagnating growth, increasing political risks worldwide, technological innovations disrupting the industry and environmental considerations, the pressure for maritime actors to adapt and innovate is continuously increasing (Melbye et al., 2016). The maritime industry is also argued to be highly cyclical and, according to Stopford (2009), goes through several types of cycles; short "business" cycles, long cycles, and seasonal cycles. This further challenges the innovation patterns for the maritime actors. Saxegaard (2016) explains that, from a Norwegian perspective, achieving innovations in the maritime industry is also necessary in order to handle the changes in the oil price and to cope with price competition from the Asian market. Regarding the current situation with a low oil price level, Norway's Minister of Finance, Siv

Jensen, stated under the Norwegian Shipowners' Association's annual conference in 2016 that costs must be cut and that restructuring is necessary throughout the industry (Årskonferansen: Intervju med Siv Jensen, 2016). She further claimed that the maritime industry in Norway is able to quickly turn to new markets. Walter Qvam (2016), CEO of Kongsberg Gruppen, earlier this year also stated that the Norwegian maritime cluster is solid and has survived several cycles throughout time, and that Norwegian maritime oriented companies will get through this period as well (Årskonferansen: Walter Qvam og Sturla Henriksen, 2016). At the same time he stressed that new forms of competence is expected to grow and that firms are going to exit the situation looking different.

Business models presented a new perspective of how to exploit business opportunities and how to increase enterprise performance. Business model innovation however goes beyond innovating single products and processes, Amit and Zott (2012) have argued. To illustrate the advantages of business model innovations, a survey presented by IBM in 2006 revealed that firms focusing on business model innovation exceeded their competitors in operating margin by five percent. The same study revealed that innovating the business model is also a tool used to reduce costs and increase strategic flexibility. Several researchers have also described the importance of a deliberate use of business models and business model innovations to obtain competitive advantages.

There is reason to believe that business model innovations can be relevant for maritime firms. According to Melbye et al. (2015), the current economic climate for the industry most likely creates a high pressure for innovation. As of today, theory concerning business models and business model innovation is widely mentioned in literature and they are both popular topics of research. Still, consensus about the exact content of the two concepts has not been identified and there exists diverging insights in literature. According to Zott et al. (2011), the business model concept has also to a large extent been concerned with e-business, start-ups and high-technological firms. Thus, the link to established firms is not fully explored.

## **1.2. Research question**

Based on the above insights, studying the Norwegian maritime actors in relation to business model innovation is considered to provide an interesting angle. We are unable to find existing research that evaluates the link from the fields of business models and business model innovation to traditional businesses such as the maritime industry. As earlier mentioned, a lot of the research conducted in these fields is concerned with emerging businesses and often related to e-commerce firms. Some researchers also suggest a link from business model

innovations to obtaining competitive advantages, higher operating margin and higher profitability. Consequently, we seek to relate our findings to the performance of the maritime actors in terms of profitability. Based on these insights, we have formulated our research question as following.

- *How do Norwegian maritime actors apply and innovate their business models?*
  - *Are these approaches linked to profitability?*

In order to answer this, we will perform a case study with five Norwegian maritime actors involved in different maritime activities. A maritime industry review, as well as a literature review of the fields of business models and business model innovations, will be conducted. Based on these reviews, a framework will be developed where expectations to case study findings will be presented. This framework will enable the thesis to answer the research question.

In relation to our research question, we have formulated the following goals for this thesis;

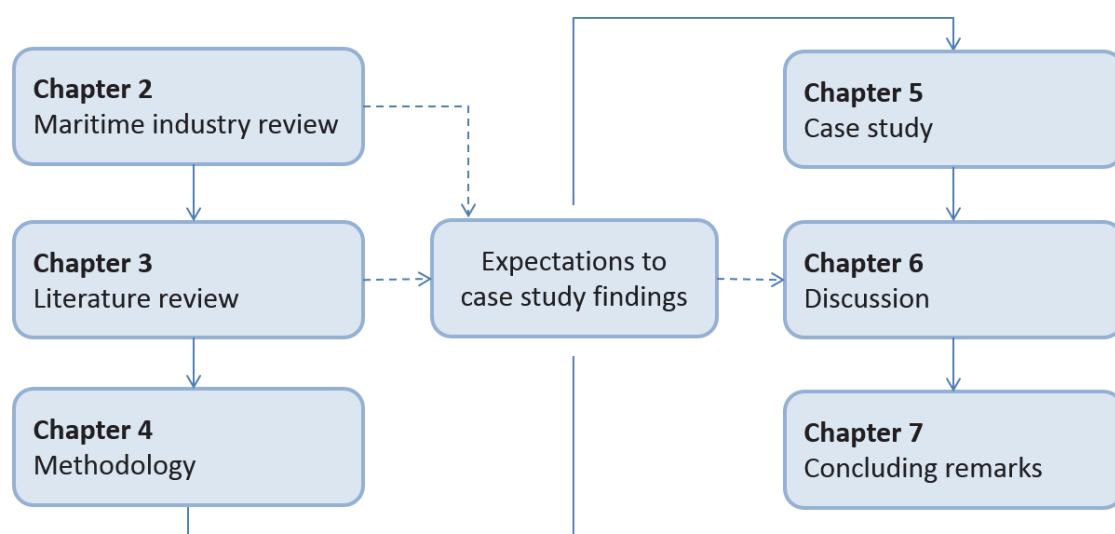
1. To understand the relevance of the literary description of the business model and business model innovation concepts in practice.
2. To identify theories on how business models should be innovated to achieve high profitability.
3. To uncover whether the case study findings indicate a pattern for actors in the same maritime category.
4. To understand whether business model innovations for Norwegian maritime actors are enabled by the same factors as their realignment capabilities.

Our research question is perceived of great interest both for the existing and future research on business models and business model innovation. Researchers have argued that there is a lack of understanding among managers of the content of the business model concept as well as how business model innovations are achieved. Providing insights that can be helpful for managers is therefore considered highly relevant. With regards to the maritime industry, the actors allegedly good adaptation capabilities and the current situation characterized by a high pressure for realignment provides an interesting environment for studying the application of business models and business model innovations. Whether these approaches are linked to profitability for maritime firms is also relevant, as the cyclical nature of the industry creates a constant struggle to stay profitable.

### 1.3. Structure

The thesis is divided into six sections. First, a review of the maritime industry is provided. Second, a literature review, including business model and business model innovation theories, is presented. An evaluation of the applied literature is also included. In the end of the literature review, we present a framework where we develop expectations to case study findings based on the reviewed literature and the maritime industry review. The framework will constitute the foundation for the discussion structure and enable the thesis to answer the research question. Next, the methodology for the thesis is addressed. Following the methodology is a case study including five Norwegian maritime firms. The case study is structured into different categories of maritime actors; shipping companies, shipyards and maritime equipment suppliers. Within each actor's category, the relation to their business model and business model innovation strategies is presented. In addition, a profitability analysis is presented at the end of each case firm. After this, the discussion is presented where the expectations from the framework are discussed in relation to case study findings. Lastly, concluding remarks are presented. This section will revisit the research question and evaluate the thesis' significance. Implications for managers and limitations with accompanying implications for future research will also be provided.

Figure 1 explains the structure of this thesis, with solid arrows indicating the order in which the thesis is structured, and the dashed arrows illustrating the logic of how the arguments for the discussion are built.



*Figure 1: Structure and logic of the thesis*





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## 2. MARITIME INDUSTRY REVIEW

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*Parts of the section have been taken and in some cases adapted from Fiksdahl and Wamstad (2015). An interview with the Norwegian Shipowners' Association, an interest and employer organization for Norwegian maritime companies, has also contributed to insights in this section. The interviewees were manager Thomas Saxegaard and advisor Kevin Luneborg Thomassen in the section for National Industrial Policy. They wish to emphasize that their comments are based on private reflections which may not necessarily be the association's viewpoints.*

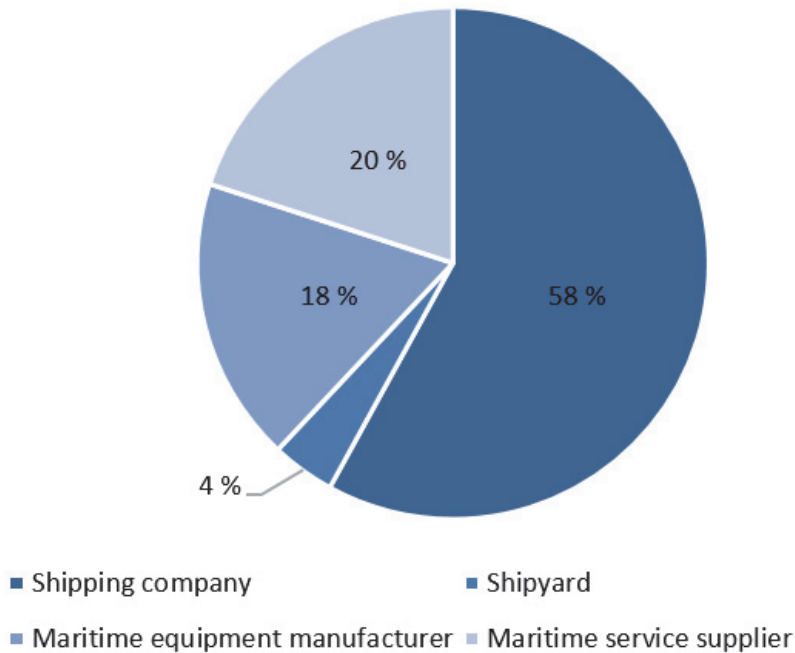
In this section, a review of the maritime industry is provided. It will present a categorization of the maritime actors, their characteristics and interrelations, a description of supply and demand in the shipping market, as well as important drivers in the industry. As part of this review, we have included a section about the maritime adaptability in Norway and a section on market foresights for the industry.

According to Melbye et al. (2015), the maritime industry can be defined as “all businesses that own, operate, design, build, supply equipment or specialist services to all types of ships and other floating entities” (p. 9). In this definition, firms with more than 50 percent of turnover from maritime activities are included. The maritime industry has a global nature and supports other industries by facilitating trade and transport. It also provides a specifically important function for traditional oil and gas, and is increasingly becoming important for the renewable energy industry. According to the UN's International Maritime Organization (IMO) “maritime transport is essential to the world's economy as over 90% of the world's trade is carried by sea and it is, by far, the most cost-effective way to move en masse goods and raw materials around the world” ((IMO) International Maritime Organization, n.d.).

### 2.1. Actors in the maritime industry

According to Jacobsen (2011), maritime firms can be involved in four main types of maritime activities. Therefore, it is common to categorize maritime firms as either a shipping company, shipyard, maritime equipment supplier or maritime service provider. The distribution of value creation between the four categories of maritime operations in Norway in 2014 is shown in figure 2.

## Value creation in the Norwegian maritime industry in 2014



**Figure 2:** Maritime value creation in Norway divided into categories

Source: Maritime Outlook 2016 (2016)

The four categories mutually depend on each other and are intertwined through either creating demand for the other business areas or supplying the demands of other maritime actors. According to a report about the maritime industry, "shipping companies and their owners are the engine of the maritime industry, especially in terms of their constant search for better and more efficient solutions" (Maritime Outlook 2015 - Navigating in a new climate, 2015, p. 86). The shipping companies therefore play an important role in the cycle of maritime actors since they initiate the demand for vessels and thus influence the demand for services that the other maritime actors provide. In general, a shipping company either owns or operates the vessels, or a combination of the two (Jakobsen, 2011). Within the shipping category, vessels can be specialized to fit demands from the other maritime actors. It is common to divide the shipping companies into four segments; offshore, drilling and production, deepsea and shortsea (Jakobsen, 2011). Offshore shipping, the largest of the shipping segments, consists of mainly supply and service ships and other vessels related to seismic operations (Maritime Outlook 2016, 2016). Drilling and production are more specialized than the offshore shipping segment and mainly concern rig companies, floating production, storage and offloading units and underwater contractors (Maritime Outlook 2016, 2016). The last two segments, deepsea and shortsea, are related to different types of transport. While deepsea is related to



intercontinental transport of goods across the world sea, shortsea concerns transport between domestic harbours along the coast and includes ferries carrying passengers. The deepsea segment can be further separated into transport related to oil, dry bulk, chemicals, products of gas and petroleum, in addition to cruise traffic (Jakobsen, 2011).

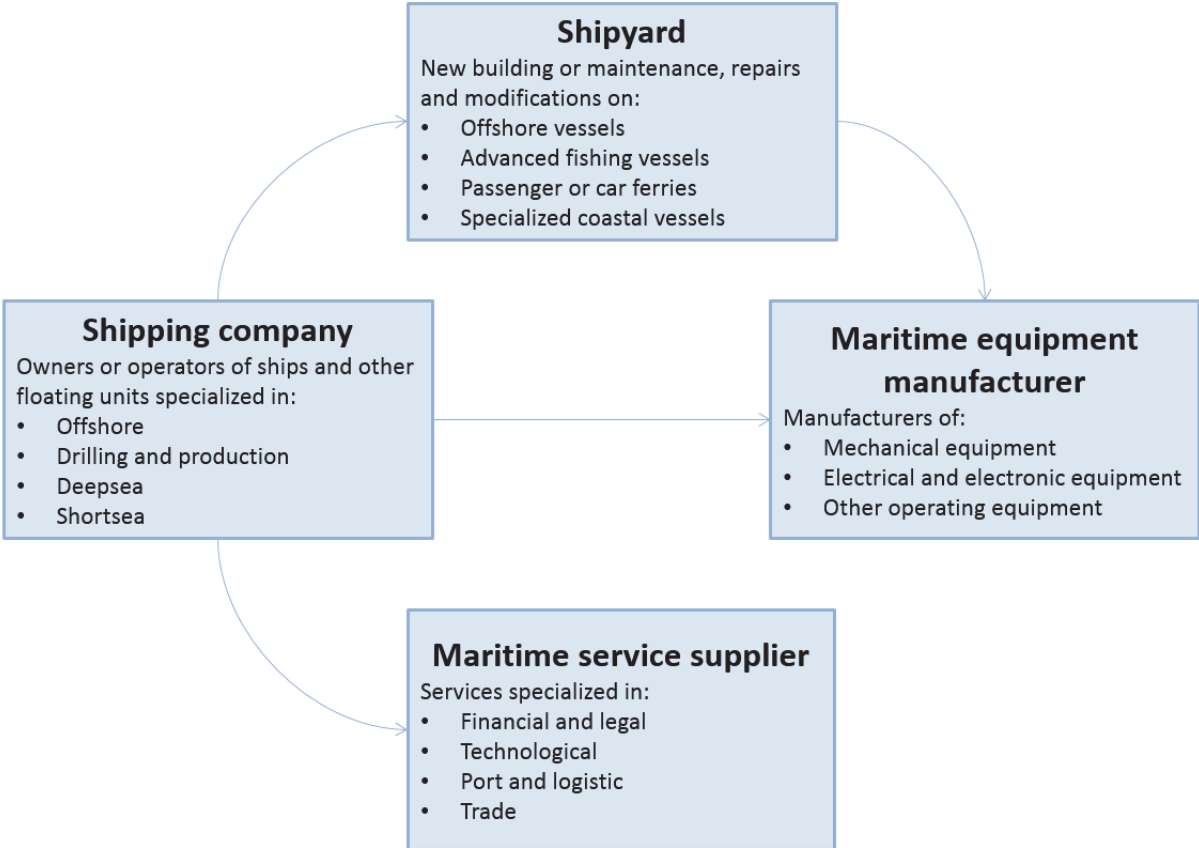
Next in the cycle are shipyards, which can be divided into the disciplines of building of new ships or maintenance, repairs and modifications for existing vessels (Jakobsen, 2011). Their activities are mainly initiated by requests from shipping companies. Norwegian shipyards are mainly oriented towards four markets; offshore vessels, advanced fishing vessels, passenger or car ferries and specialized coastal vessels (Working in the Norwegian Shipyard industry, 2015). In general, shipyards depend on contracts from shipping companies and the financial situation in the global economy thus affects this category of maritime activities to a large extent (Working in the Norwegian Shipyard industry, 2015). In Norway, it is common that the yards specialize in either new building or maintenance, repairs and modifications since operating the two specialisations are quite different (Working in the Norwegian Shipyard industry, 2015). Being involved in new builds is for example more volatile to changes in the international economic conditions compared to maintenance, repairs and modifications (Melbye et al., 2015).

In order to provide the ships and other related devices requested by the shipping companies, maritime equipment suppliers are essential (Jakobsen, 2011). Melbye et al. (2015) separate the maritime equipment suppliers into three main segments; mechanical equipment, electrical and electronic equipment and other operating equipment. Mechanical equipment is a large group that involves suppliers of cranes, winches, propellers and engines. Electrical and electronic equipment concerns components such as specialist hardware, software, electrical propulsion systems, bridge equipment or dynamic positioning systems. The last segment, other operating equipment, consists of marine paint, lubricants, cables, chains and lifeboats, as well as other supplies related to equipment used for everyday operation of ships. As for the situation in Norway, Melbye et al. (2015) claim that companies within this category are more vulnerable to the economic conditions in the global economy than other type of companies in Norway. This is especially relevant because two thirds of the turnover for equipment suppliers in Norway originate from the volatile offshore oil and gas market, according to Melbye et al. (2015). The last third of the turnover comes from sales to the merchant fleet or specialty fleet such as navy, fishing vessels or vessels for the marine industry (Melbye et al., 2015). The volatility of sales for maritime equipment suppliers is also caused by a high proportion of sales related to new building, Melbye et al. (2015) highlight. Still, Melbye et al. (2015) note that 15 percent of

maritime equipment suppliers' sales are related to service and spare parts, which is a less volatile market.

Once a vessel is in operation, maritime service providers become increasingly important. These services are mainly driven by the demand from shipping companies. There are four main segments where maritime services are provided; financial and legal, technological, port and logistics and trade. The dominating services within the financial and legal segment include financial institutions, brokers, lawyers and insurance companies. Within technological services, classification, engineering services, ship design and installation work are the most prominent. Regarding port and logistic services, the most important activities include port facilities and supply bases, loading and unloading, and air transportation for ships and rigs. Lastly, trade services include wholesale and retail companies that convey marine equipment (Jakobsen & Espelien, 2011).

Figure 3 summarizes the categorization between the four maritime actors, their sub-categorizations and their interrelations. The arrows in the figure indicate demand.

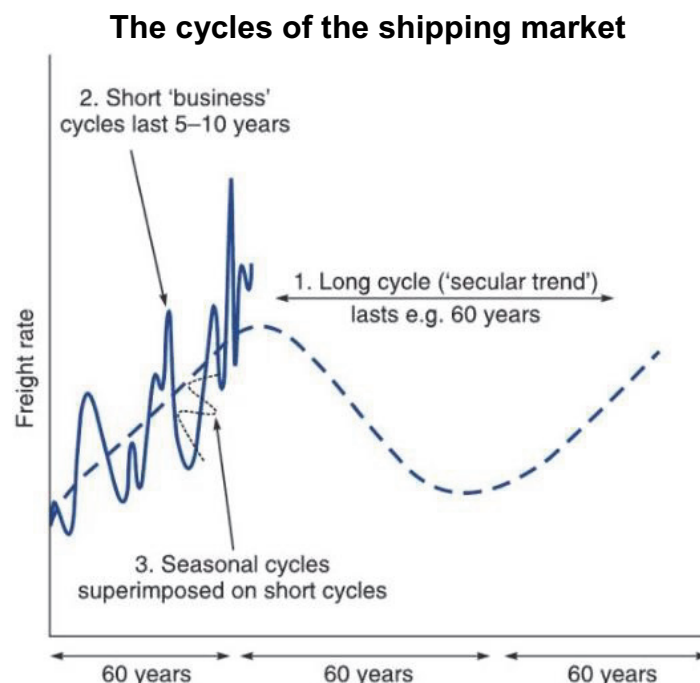


**Figure 3:** Categorization of and interaction between maritime actors  
Source: adapted from Jakobsen (2011)

## 2.2. Supply and demand in the shipping market

According to Saxegaard (2016), the shipping companies decide how many vessels are demanded, what types of vessels are built, the functionality they should contain and how the vessels are going to fulfil regulatory requirements and environmental considerations. The shipping companies also put pressure on the remaining actors, such as lawyers, brokers and insurance companies. Therefore, the shipping companies are an important driver for the maritime industry actors' activities regarding innovations, deploying new technology. A couple of years ago, 90 percent of the Norwegian shipyards' activities were related to offshore service shipping companies (Saxegaard, 2016). Today, the focus has shifted towards other types of boats, partly as a result of the oil price, but also from shipping companies altering their strategies.

As the shipping companies can be considered the main driver of demand from other maritime actors, the demand factors for this market will be used as a basis for evaluating the industry as a whole. Stopford (2009) argues that the shipping market is characterized by economic cycles. He claims that the industry follows three types of cycles; short “business” cycles, long cycles, and seasonal cycles. His insights are illustrated in figure 4.



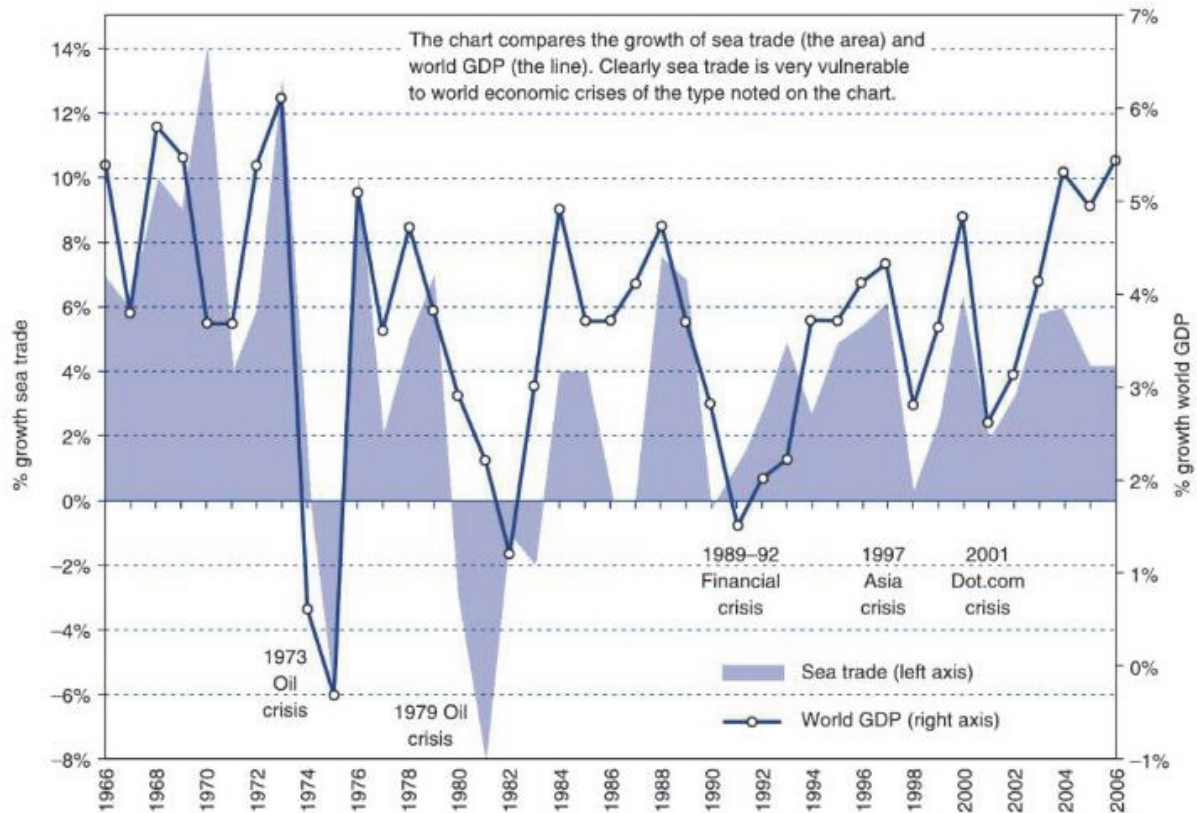
**Figure 4: Shipping market cycles**  
*Source: Stopford (2009)*

The short cycle, also referred to as the business cycle, is what often is associated with a shipping cycle. According to Stopford (2009), these short cycles consist of a recurring stage pattern of four stages that the industry oscillates between; trough, recovery, peak/plateau and collapse. The first stage, trough, is characterized by surplus in shipping capacity, falling freight rates and negative cash flows. The next stage, recovery, describes the stage where supply and demand moves towards balance and confidence in the market is growing. Thirdly, the peak/plateau phase occurs when the surplus is absorbed. In this phase, freight rates usually rise to levels two or three times the operating costs, leading to high earnings and increased liquidity. The phase can last from a few weeks to several years. Stopford (2009) points out that there can be cases of false recovery, where the shipping industry remains in the through phase. Lastly, as supply exceeds demand, the stage of collapse occurs. As with the through phase, freight rates fall again, but in contrast to the through phase, the shipping companies have higher liquidity during a collapse. The effects of the collapse phase are often enhanced by economic shocks.

In addition to these short cycles, seasonal cycles and long cycles also exist in the shipping market. The seasonal cycles consist of fluctuations in freight rates due to seasonal patterns of demand for sea transport whereas the long cycles are driven by technical, economic or regional change. From this, it is evident that maritime actors are faced with realignment pressure both in a short and long term perspective.

According to Stopford (2009) the variables affecting the shipping market cycles with regards to demand factors are first of all the world economy and seaborne commodity trade, in addition to average haul, random shocks and transportation costs. Variables that drive supply are, according to Stopford (2009), the world fleet, fleet productivity, shipbuilding production, scrapping and losses and freight revenue. When considering the world GDP in relation to sea trade, it is clear that the market cycles of the maritime industry closely correlate the developments in the world economy. This is illustrated in figure 5.

## Relation between sea trade and world GDP



**Figure 5:** Relation between sea trade and world GDP

Source: Stopford (2009)

As Stopford (2009) shows with this figure, sea trade is very vulnerable to world economic crises, especially those related to oil or global financial distress, or crises that are specific to an industry or region. Stopford (2009) argues that the severe peaks are connected to random shocks which fall outside the normal business cycle mechanisms of the shipping market. Closely related to these random events is the development of seaborne commodity trades. With the largest individual commodity traded by the sea being crude oil, the oil and its price can work as a trigger for the economic shocks shown in figure 5.

### 2.3. Important drivers in the maritime industry

According to a report for Maritim21, a Norwegian program for maritime research, development and innovation, the key drivers for the maritime industry in the future years are development in the world economy and demography, technological innovations, climate change and environment, regulatory framework, oil price in addition to increasingly specialized and global exchange of competencies and security issues (Melbye et al., 2016).

First, as previously mentioned, the maritime industry is highly affected by the development in the world economy and its demography. According to Henriksen, the global economy currently is weakened with stagnating growth and high uncertainty (Maritime Outlook 2016, 2016). He argues that the historically low interest rates and sharply reduced commodity prices has led to a pessimistic outlook on the world economy and consequently the maritime industry. Henriksen additionally mentions that leading countries in the world economy are struggling financially and have less opportunity to manoeuvre this crisis (Maritime Outlook 2016, 2016). A slower growth in the remaining BRICS-countries than expected, except India, also puts pressure on the world economy. These diverging growth rates in different parts of the world have led to changing trade patterns (Melbye et al., 2016). Because of these changes in the trade pattern, the historically strong connection sea transport has had to world trade is weakened (Melbye et al., 2016). The shift towards service economy and an aging population in the world's richest countries has weakened the link further, Melbye et al. (2016) argue. Changing forms of demand, the sharing economy and circular economy, i.e. cyclical reuse of materials for world sustainability, are changing this even further, according to Melbye et al. (2016).

In addition to stagnating economic growth, Henriksen points out increasing political tensions and reduced international confidence as major trends that will drive the development in the global maritime industry (Maritime Outlook 2015 - Navigating a new climate, 2015). He highlights that the conflicts between China, Russia, USA and members of EU regarding international political conflicts create growing political uncertainty. Further, he argues that the imbalance in power can hinder collective solutions to world problems, which in turn affect the maritime industry because of its dependence on global trade, cooperation and regulations (Maritime Outlook 2016, 2016). Thomassen (2016) points to Brazil's corruption scandal and the challenges in the European economy as important influencers for maritime industry. Furthermore, the report for Maritim21 highlights that trade restrictions from Russia and the increasing prevalence of countries with state governance are increasing political risks (Melbye et al., 2016).

With regards to the second driver in the maritime industry, technological innovations, Melbye et al. (2016) highlight enabling technology like ICT, advanced production processes and bio- and nanotechnology as important. Enabling technology "constitutes the core of advanced innovative products, are part of many strategic important value chains, provide many products great added value and they form the basis for competitiveness in the future (Spooren, 2010; Carlin et. al., 2016; *in* Melbye et al., 2016, p. 31). Melbye et al. (2016) claim that there

is an increasing interest from the industry, R&D institutions and political institutions in these types of technologies. As these technologies develop quickly, continuously developing expertise will be necessary, Melbye et al. (2016) argue. Additionally, innovations within enabling technology are often generic, far reaching and can combine competences and people in new ways. Melbye et al. (2016) therefore claim that technological innovations are essential to drive the maritime industry's development. Being a frontrunner on technology is especially important for high-cost countries, such as Norway, to cope with the high labour costs, Melbye et al. (2016) point out.

The third factor highlighted by Melbye et al. (2016) in the Maritim21 report is climate change and environmental considerations, which is part of the trend towards circular economy. During the Sustainable Innovation Forum held in Paris 2015, an agreement upon a climate agreement was achieved, where sea transport was highlighted as part of the solution with moving a larger part of regional and local transport of goods from land to sea (Maritime Outlook 2016, 2016). The solution also includes the shipping companies streamlining operations and generating new environmental friendly technologies. Opportunities within the market for environmental friendly solutions highly depend on the regulations, as Melbye et al. (2016) explain. According to the Maritim21 report, stricter environmental regulations are considered favourable by Norwegian maritime actors, as they are a frontrunner within fulfilling environmental requirements. Cost saving solutions, such as more effective ship design, that can benefit maritime firms are the most attractive regardless of regulations, Melbye et al. (2016) argue. Solutions that require larger investments are however less attractive unless forced by regulations.

Highly related to this is the fourth factor from Maritim21's report; regulatory framework. As the report explains, regulations from national and international governments drive what type of solutions the maritime industry will develop (Melbye et al., 2016). The regulations can either be requirements enforced through laws or encouragement through subsidies and grants. Melbye et al. (2016) argue that the geopolitical regulatory framework has also become more important during the last two years. Henriksen highlights that the current uncertainties in market conditions demands predictable and competitive maritime politics within each country (Maritime Outlook 2016, 2016).

The fifth demand factor the Maritim21 report points to is the oil price, which is essential for the activity level especially within the offshore segment of the maritime industry. For example offshore service vessels, rigs and related equipment and services are affected by the oil price (Melbye et al., 2016). The sudden price drop in 2015 has had severe consequences for

the industry. Today, around 70 percent of the maritime industry in Norway is related to offshore (Melbye et al., 2016) in contrast to 10-15 years ago when the share was 40 percent (Norske offshorerederier 2015 - I krevende farvann, 2015). The maritime industry's strong connection to offshore activities makes it vulnerable to oil price fluctuations, which the industry has been experiencing in the later years. A decline in demand for these services creates ripple effects throughout the maritime industry, Melbye et al. (2016) argue.

Increasing specialization and global flow of skills is the sixth factor Melbye et al. (2016) mention. To ensure competitiveness in this tightly connected world economy, acquiring, developing and retaining the best talents are essential. Lastly, security is brought up as an increasingly important field for the maritime industry. Advanced, integrated solutions require a higher level of security to make sure communication, storage and sharing is solid. Melbye et al. (2016) argue that adapting to and possibly offering these solutions can be an important advantage for maritime actors.

## **2.4. Maritime adaptability in Norway**

The Norwegian fleet is currently stronger than before with regards to the number of ships and the fleet's value (Saxegaard, 2016). The culture for sharing information and the Norwegian maritime cluster's collaboration are often highlighted as competitive advantages for Norway. As Saxegaard (2016) explains, the tight connection between the four maritime actors is an enabling factor for the maritime industry's adaptability in Norway. The traditions for maritime activities also stand strong in the Norwegian maritime cluster. In fact, 7 out of 10 shipping companies state that the experience seafarers bring to their companies is crucial for the further development of the company (Thomassen, 2016). The general flat structure in Norwegian organizations makes it possible to transform the seafarers' practical experience into innovations (Thomassen, 2016).

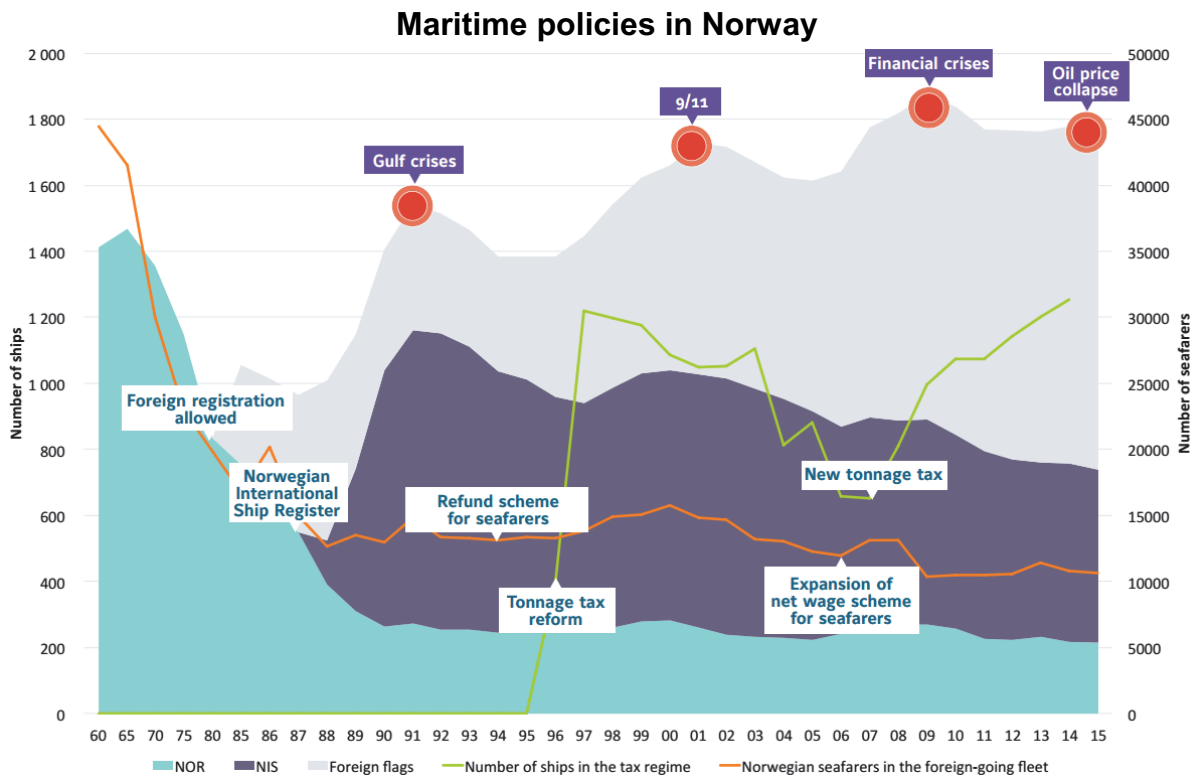
According to Thomassen (2016), maritime service providers and equipment suppliers to a large extent contribute with innovations. For example, offering innovative solutions that help the shipping companies or shipyards save money is relevant in the current economic downturn. As for the shipping industry, Thomassen (2016) highlight that shipping companies traditionally have been conservative regarding their business models. More recently however, he argues that these companies have renewed themselves in this area. He further argues that people in general believe the Norwegian maritime industry is a stout business with a low number of innovations. According to Thomassen (2016), this is not the case, as for example a significant proportion of inventions in offshore vessels' bows and hulls have been invented at



Norwegian shipyards. He believes this misconception is due to the industry being less visible than when ships were found in local harbours throughout the country. Thomassen (2016) further argues that the maritime industry in Norway is a frontrunner in many areas and their business models and strategies are clearly formulated and continuously developed to create value for their customers.

Saxegaard (2016) argues that the maritime actors' ability to achieve innovations is highly vulnerable to the access to capital. This makes it more difficult for smaller actors in the industry to make long term commitment to innovations. The situation is different for larger actors, however, as they are better positioned for conducting innovations regularly, regardless of the market situation, Thomassen (2016) explains. Thus, the presence of large, international companies like DNV GL, Statoil, Rolls Royce, etc. in Norway brings capital to the country and initiates demand from other, smaller maritime actors.

The national and international regulations of the maritime industry also highly affect the maritime actors in Norway (Maritime Outlook 2016, 2015). More specifically, regulations that concern the environment are argued as important drivers for innovation in the maritime industry by Saxegaard (2016) and Thomassen (2016). As Siv Jensen, Norway's Minister of Finance, highlighted at the Norwegian Shipowners' Association's conference in 2016, the government will continue to contribute to maritime actors' adaptability by ensuring competitive regulations and taxes (Årskonferansen: Intervju med Siv Jensen, 2016). Figure 6 illustrates that favourable maritime policies from the Norwegian government has helped strengthen the maritime actors in several economic downturns. In this figure, "NOR" is an abbreviation for the number for ships in the Norwegian Ordinary Ship Register and "NIS" is an abbreviation for the number of ships in the Norwegian International Ship Register.



**Figure 6:** Maritime policies' impact on maritime industry in Norway  
*Source: Maritime Outlook 2016 (2016)*

## 2.5. Market foresights for the maritime industry

The current realignment period is challenging for the maritime actors worldwide. The oil price dropped from above 100 dollars per barrel to 40 from the middle of 2014 to early 2016 (Melbye et al., 2016), The situation is most challenging for offshore oriented firms, where vessels are laid up and people are being laid off (Saxegaard, 2016). In addition to the oil price situations, this comes as a consequence of over contracting over the last couple of years (Saxegaard, 2016). Access to capital is further making adaptations harder. The current situation is characterized by reduction in investment and drastic measures to reduce operating costs for maritime actors (Melbye et al., 2016). Thus, the situation for the shipping companies can be considered as a phase of collapse, based on Stopford's (2009) theories.

Even though the offshore part of the maritime industry is most affected by the current situation, the entire maritime value chain has been affected as the report for Maritim21 highlights. Melbye et al. (2016) claim that the industry actors are starting to realize the dark future prospects, where oil prices will remain at a low level in the long term. Henriksen, the CEO of Norwegian Shipowners' Association, stated at the association's annual conference in 2016, there is "currently a great level of seriousness that characterize our industry"

(Årskonferansen - Åpningsinnlegg Sturla Henriksen, 2016). He stresses that firms have a certain degree of optimism towards the future, but they are realizing that it is necessary to change their traditional way of operating and to explore new opportunities. Adapting to the new cost focus of the industry will require innovations from the industry actors. As Melbye et al. (2016) argue, “in such an economic climate one often find that the pressure for innovation is strong and that new solutions are developed“ (p. 8).

Henriksen argues that there are large opportunities at sea yet to be discovered (Årskonferansen - Åpningsinnlegg Sturla Henriksen, 2016). He mentions windmills at sea, deep sea mining and offshore fishing as examples of how shipping companies can leverage their competences to similar business opportunities. John Vigrestad from The Research Council of Norway support these claims by highlighting maritime technology and the markets for offshore wind and aquaculture as important opportunities for the Norwegian maritime industry (Karlsen, 2016). In addition to this, Melbye et al. (2016) point to delivering products and services to traditional fishing and fish farming as an area with large potential for growth. Positioning within these new business areas will be an important advantage for the shipping companies and in turn the other maritime actors, Saxegaard (2016) argues. Still, Melbye et al. (2016) claim that offshore wind is two or three times more costly than land based solutions. Thus, such opportunities require strong financial resources that many maritime actors lack today. At the same time, it is expected that the offshore wind market will grow by 20 percent and that related investment costs will eventually be reduced, as was the case with land based windmills (Melbye et al., 2016). The shipyards are also looking for new ways of transporting tonnage. Building ships adapted to liquefied natural gas, LNG, are also an important business opportunity for the industry. Clearly, there are possibilities present for the maritime actors, but with a pressure on profitability, the maritime actors' immediate response have become a cost consciousness (Melbye et al., 2016). The current market situation is expected to last at least two years, but the long term effects of this downturn are less certain (Melbye et al., 2016). Melbye et al. (2016) predict that offshore operations will remain the most significant activity, but that companies will adjust their strategies to also fit the other markets.

Another trend is the movement towards digitalization, Internet of Things, Big Data, robotizing, automation, remote control and autonomy. These technologies challenge how the maritime companies conduct business (Maritime Outlook 2016, 2015; Saxegaard, 2016). Saxegaard (2016) explain that even though the industry is not among the fastest adopters of new technology, this development is not possible to ignore. Melbye argues that new business models will develop based on these technologies and that they will “turn the established

business models of the industry upside down” (Karlsen, 2016). As he states, “robotics, Big Data ... and advanced computing are important trends that will lead to more efficient maritime operations and constantly improved production processes in the maritime industry” (Karlsen, 2016). Melbye predicts that instead of ships being the value creating mechanism, data will be an important source of value for the maritime industry and claim that the enabling technologies are going to disrupt the industry (Karlsen, 2016).

## **2.6. Summary of the maritime industry**

Throughout this review, the characteristics and interrelations of the actors in the maritime industry have been described. The review revealed that the shipping companies are considered the initiator of demand and that the offshore focus of shipping companies highly affects the shipyards, maritime equipment suppliers and maritime service providers. Through this review, it was identified that supply and demand in the shipping market is affected by short “business” cycles, long cycles and seasonal cycles and that the situation in the world economy and level of sea trade affect the maritime industry.

Important drivers for the maritime industry have also been highlighted in this review. The combination of stagnating economic growth in the BRICS, except India, a changing trade pattern and increased political uncertainty were pointed out as the most important drivers. A consequence of these factors has been a weaker link between sea transport and world trade. Technological innovations, environmental considerations, national and international regulations and the oil price were also argued as important drivers in the maritime industry. With regards to the adaptability of maritime actors in Norway, key characteristics were argued to be the cluster culture and widespread collaborations, innovative abilities, good access to capital and favourable regulations.

Lastly, this review of the maritime industry provided market foresights. The industry is under high pressure, with low oil prices, overcapacity and few investments. Based on Stopford’s (2009) theories, the shipping industry can be categorized as being in a collapse phase. Melbye et al. (2016) argue that the current market situation is expected to last at least two years and highlight that its long term effects are uncertain. The maritime actors are still argued to have a large number of business opportunities, including windmills at sea, deep sea mining, offshore fishing and other types of aquaculture. In addition, the possibilities from digitalization and enabling technologies are argued to be vast. As presented, Melbye claims that new business models will develop based on these technologies and that they will “turn the established

business models of the industry upside down” (Karlsen, 2016). Adapting to these changes can therefore be considered necessary for the maritime actors.



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### **3. LITERATURE REVIEW**

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In this section, the literature reviewed in this thesis is presented. The review mainly consists of two building blocks; theories of the business model concept and theories of business model innovation. We consider these building blocks appropriate for understanding the insights from existing research that is related to this thesis' research question. First, we provide a general introduction to business model and business model innovation theory. Then, our review addresses business model components and business model innovation types. Third, we address literature concerning business model approaches and business model innovator strategies. Lastly, we investigate further perspectives on business models and business model innovations. Key points from the review are presented at the end of each chapter.

We have also included an evaluation of reviewed literature in this section. The aim of the evaluation is to provide an understanding of relevant application areas, as well as potential shortcomings of the selected literature. Lastly, this section ends with a framework which will constitute the structure for future discussions. Here, we develop expectations of case study findings based on the literature review and the maritime industry review. This will enable us to answer our research question.

Table 1 provides an overview of the main literature applied in this review.

**Table 1: Overview of the main literature applied**

<b>Author</b>	<b>Year</b>	<b>Number of citations</b>	<b>Classification of article</b>	<b>Journal/Type of publication</b>
Amit and Zott	2012	376	Theoretical	MIT Sloan Management Review
Casadesus-Masanell and Ricart	2010	944	Theoretical	Long Range Planning
Chesbrough	2007	715	Theoretical	Strategy & Leadership
Demil, and Lecocq	2010	626	Theoretical/ case study	Long Range Planning
Giesen, Riddleberger, Christner and Bell	2009	N/A	Case study	Executive Report for IBM Institute for Business Value
IBM Global Business Services	2006	N/A	Case study	Publication by IBM Global Business Services
Johnson, Christensen, and Kagermann	2008	1566	Theoretical	Harvard business review
Lambert and Davidson	2013	87	State of the art	European Management Journal
Mitchell and Bruckner Coles	2004	86	Case study	Journal of Business Strategy
Moingeon and Lehmann-Ortega	2010	22	Case study	M@n@gement
Morris, Schindehutte and Allen	2005	1562	Theoretical	Journal of Business Research
Osterwalder, Pigneur and Tucci	2005	1883	Theoretical	Communications of the Association for Information Systems
Shafer, Smith and Linder	2005	1204	Literature review	Business Horizons
Taran, Boer and Lindgren	2015	5	Theoretical	Decision Sciences
Teece	2010	2467	N/A	Long Range Planning
Zott, Amit and Massa	2011	1332	Literature review	Journal of Management
Zott and Amit	2010	1006	Theoretical	Long Range Planning



This table shows that the main emphasis in the literature applied in this thesis is based on theoretical representations, while only a handful of articles provide case studies and empirical evidence. Another observation is that a substantial number of articles have achieved high numbers of citations. Despite this high level of citation, the articles in this literature review are relatively new. As table 1 indicates, they span the years from 2004 to 2015. This can indicate the newness of the business model and business model innovation concepts and can be considered to underpin the concepts' relevance for firms in 2016.

### **3.1. Introduction to business model and business model innovation theory**

#### **3.1.1. History of business models and context of the concept**

Literature concerning business models has been published since 1990 (Lambert and Davidson, 2012). In the late 1990s, the concept became an established expression in the emerging new technologies sector before it extended to managerial and academic spheres (Moingeon and Lehmann-Ortega, 2010). To illustrate this, the amount of scholarly publications containing the keywords “business model” was 383 in 1995, while 3850 in 2000, 11,500 in 2005 and 22,000 in 2001 (Klang et al., 2014). According to several published articles, a significant factor to this extension is the growth of the knowledge economy. Through the millennium, the business model term was oriented towards new ways in which companies made money. Teece (2010) argues that the growth of the Internet and e-commerce challenged the traditional views of the business model and allowed customers and businesses easy access to vast amounts of data and information. This led to customer power increasing. The Internet represented a new distribution channel and required new ways to deliver customer value, as well as capturing value, for the firm. Much of the existing research of business models is therefore related to e-commerce (Mahadevan, 2000; *in* Morris et al., 2005).

There exists no exact definition of the business model concept. Zott et al. (2011) present the following designations that the business model has been referred to as;

- Statement (Stewart & Zhao, 2000)
- Description (Applegate, 2000; Weill & Vitale, 2001)
- Representation (Morris, Schindehutte & Allen, 2005; Schafer, Smith & Linder, 2005)
- Architecture (Dubosson-Torbay, Osterwalder & Pigneur, 2002; Timmers, 1998)

- Conceptual tool or model (George & Bock, 2009; Osterwalder, 2004; Osterwalder, Pigneur & Tucci, 2005)
- Structural template (Amit & Zott, 2001)
- Method (Afuah & Tucci, 2001)
- Framework (Afuah, 2004)
- Pattern (Brousseau & Penard, 2006)
- Set (Seelos & Mair, 2007)

Zott et al. (2011) further argue that the business model often is studied without an explicit definition of the concept. Shafer et al. (2005), Teece (2010) and Zott and Amit (2010) are however among the authors that present an explicit formulation of the concept. Through studying established publications during the years 1998 to 2002, Shafer et al. (2005) revealed 12 definitions. By integrating these findings with a principle of offering an easily understood and communicated definition, Shafer et al. (2005) propose the following; “a representation of a firm’s underlying core logic and strategic choices for creating and capturing value within a value network” (p. 202). Teece (2010) argues that; “the essence of a business model is in defining the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit” (p. 172). Zott and Amit (2010) claim that the overall objective of a firm’s business model is to exploit a business opportunity by creating value for the parties involved. They define 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). Casadesus-Masanell and Ricart (2010) present the business model as “the logic of the firm, the way it operates and how it creates value for its stakeholders” (p. 195). They suggest that the business model concept consists of two components; choices and consequences. They argue that since every firm makes a number of choices, every firm has a business model.

Morris et al. (2016) claim that progress in the academic field of business models has been hindered due to a lack of consensus about the business model term (Morris et al., 2005). According to these authors, there is no universal understanding of the definition, in addition to a confusion in terminology where the terms business model, strategy, business concept, revenue model and economic model are used interchangeably. The misidentification between firm strategy and business models is a recurrent topic in literature. This misidentification can be perceived as understandable as Morris et al. (2005) point out that a business model is not a strategy, but at the same time includes a number of strategy elements. Despite this overlapping,

strategy and business models are still regarded as distinguishable concepts in the majority of the literature reviewed in this paper. For example, Casadesus-Masanell and Ricart (2010) argue that a business model is a reflection of the firm's realized strategy. In their view, strategy is the contingent plan as to what business model to use and has profound implications on competitive outcomes. They further argue that choosing a particular business model means choosing a particular way to compete and create value. Teece (2010) supports this by claiming that a business model is more generic than a business strategy. He argues that strategy analysis is an essential step in designing a competitive sustainable business model. Lambert and Davidson (2012) show similar perspectives by viewing the business model as a manifestation of strategy.

In addition to confusion in terminology, Teece (2010) argues that the business model concept lacks theoretical grounding. He claims that the concept has no established place neither in economic theory, in organizational and strategic studies, nor in marketing science, even though the term is associated with all of the above. Morris et al. (2005) further argue that the business model construct is built upon central ideas in business strategy and associated theoretical traditions like resource-based theory, the value chain concept, strategic network theory, cooperative strategies and transaction cost economics. According to Lambert and Davidson (2013), the different conceptualizations in the literature vary depending on the purpose for which the concept is being used and the theoretical perspective of the researchers.

### **3.1.2. Definition of business model innovation and related theory**

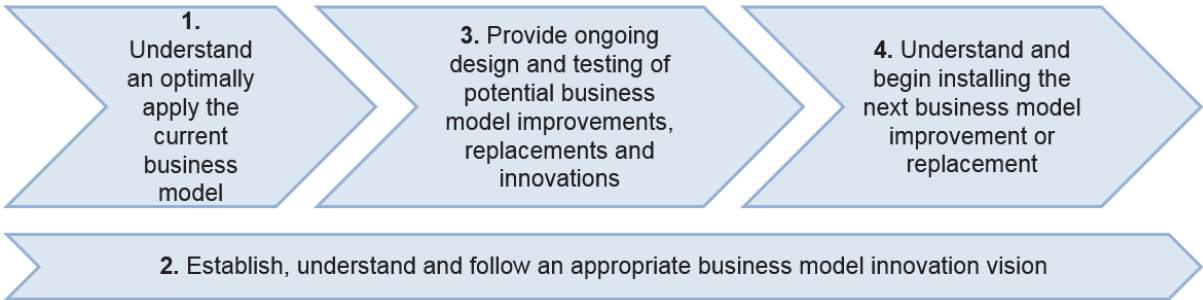
As with business model theory, business model innovation theory has not yet found its place in literature. Teece (2010; *in* Taran et al., 2015) argues that “business model innovation theory is scarce and lacks intellectual home” (p. 232). Moreover, Taran et al. (2015) claim that how to achieve business model innovations have not been addressed appropriately in existing literature. Furthermore, Taran et al. (2015) argue that managers' lack of understanding of business model innovations, strategies for implementing these type of innovations and the opportunities associated with business model innovations puts pressure on increasing the knowledge of business model innovations.

A general definition of innovation, given by De Jong and Den Hartog (2007), is improving existing offerings by exploring and implementing new ideas that fits the firm's value proposition. According to several authors, business model innovation involves continuous and parallel development of the business model components (Amit & Zott, 2012; Taran et al., 2015). At the same time, Amit and Zott (2012) argue that business model innovation goes beyond innovating single products and processes. Teece (2010) states that “changing the firm's

business model literally involves changing the paradigm by which it goes to market” (p. 187). According to Giesen et al. (2009), product and service innovations still work as key drivers for business model innovations. Teece (2010) supports this by claiming that technological innovations must accompany business model innovations to capture value.

Taran et al. (2015) raise an important question within the field of business model innovation; “when can we call a change in an organization a business model innovation?” (p. 304). In relation to this, Mitchell and Bruckner Coles (2004) distinguish between business model improvements, replacements and innovations. They regard an improvement as a successful adjustment of an component of the business model that outcompete current offerings, while a replacement is when an improvement affects a large proportion of the business model. A business model innovation, as defined by Mitchell and Bruckner Coles (2004), is therefore a collection of replacements that “offers products and services previously unavailable to customers” (p. 41).

According to Zott et al. (2011) “the business model can be a vehicle for innovation as well as a source of innovation” (p. 24). Taran et al. (2015) similarly argue that business model innovation can be viewed as either a process or an outcome. With regards to business model innovation as an outcome there are a number of ways a business model innovation can affect its environment. Innovating the business model can for example lead to opportunities in existing markets being further exploited, stimulate a new market (Amit & Zott, 2012) or even create a new industry (Teece, 2010). With regards to business model innovation as a process, Mitchell and Bruckner Coles (2004) present a continuous business model innovation process that they claim consist of at least four simultaneously performed strategies. Figure 7 shows the process they present.



**Figure 7:** *The process of innovating the business model*  
*Source: adapted from Mitchell & Coles (2004)*

### **Key points 3.1**

*Introduction to business model and business model innovation theory*

#### **History of business models and context of the concept**

- There exists confusion regarding the exact content of the business model concept
- The business model concept is regarded an interdisciplinary term

#### **Definition of business model innovation and related theory**

- Business model innovation goes beyond innovating single products and processes
- How extensive changes must be to be categorized as a business model innovation is not clear
- Business model innovation can be viewed as a process or an outcome

## **3.2. Business model components and business model innovation types**

### **3.2.1. Business model components**

With no exact definition, there are several ways of approaching the business model concept. Zott et al. (2011) argue that many authors have attempted to represent the concept; some through a mixture of informal textual, verbal and ad hoc graphical representations. Other authors have provided a business model ontology, i.e. a conceptualization and formalization of the elements, relationships, vocabulary and semantics of business model. Among the different representations used in this literature review, there exist similarities in what components the authors address. This corresponds with Giesen et al.'s (2009) argument; that that there is a growing agreement on what elements define a business model.

From the literature evaluated in this paper, the overview of business models components shown in table 2 is developed. The names of the listed components in table 2 are modified to suit all of the reviewed articles.

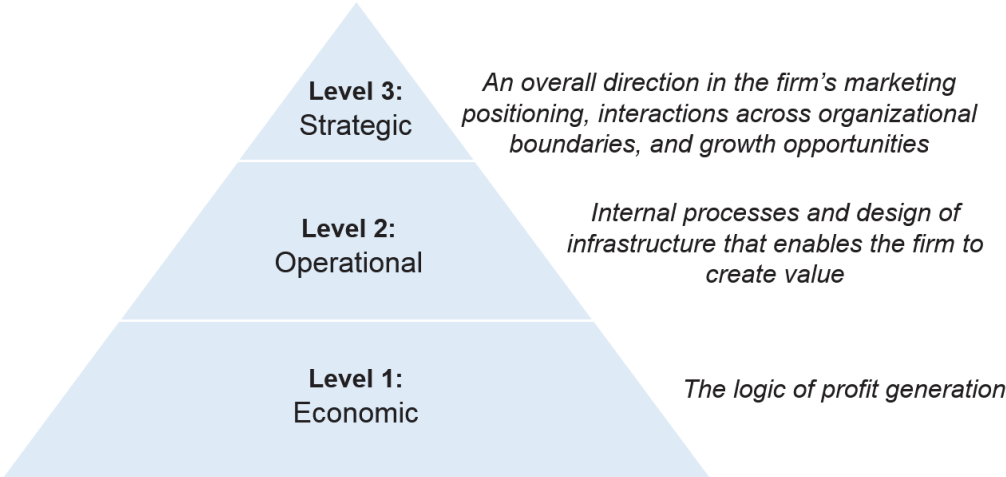
**Table 2:** Overview of which papers include the different business model components

<b>Business model component</b>	<b>Papers including the component</b>
<b>Value proposition</b>	Chesbrough (2007); Demil and Lecocq (2010); Giesen et al. (2009); Johnson et al. (2008); Moingeon and Lehmann-Ortega (2010); Morris et al. (2005); Osterwalder et al. (2005); Shafer et al. (2005); Taran et al. (2015); Teece (2010); Zott and Amit (2010).
<b>Profit/revenue generation</b>	Chesbrough (2007); Demil and Lecocq (2010); Giesen et al. (2009); Johnson et al. (2008); Moingeon and Lehmann-Ortega (2010); Morris et al. (2005); Osterwalder et al. (2005); Schafer et al. (2005); Taran et al. (2015); Teece (2010); Zott and Amit (2010).
<b>Value chain architecture</b>	Chesbrough (2007); Demil and Lecocq (2010); Giesen et al. (2009); Johnson et al. (2008); Moingeon and Lehmann-Ortega (2010); Morris et al. (2005); Osterwalder et al. (2005); Schafer et al. (2005); Taran et al. (2015); Teece (2010); Zott and Amit (2010).
<b>Competitive strategy</b>	Chesbrough (2007); Giesen et al. (2009); Morris et al. (2005); Schafer et al. (2005); Taran et al. (2015).
<b>Target customer</b>	Osterwalder et al. (2005); Schafer et al. (2005); Taran et al. (2015).

Of these components, value proposition is a prevalent topic in literature. According to Morris et al. (2005), “there is no business without a defined value proposition, and the creation of value provides a justification for the business entity” (p. 729). In the literature review conducted by Zott et al. (2011), a strong consensus that the business model revolves around customer-focused value creation was identified. They identified in their literature review that that the business model is not a value proposition, a revenue model, or a network of relationships by itself; it is all of these elements together. According to Afuah and Tucci (2001; in Zott et al., 2011), a business model can be viewed as a “system that is made up of components, linkages between components, and dynamics” (p. 1037). Teece (2010) argues that criteria for determining whether one has designed a good business model is that it yields value propositions for the customers, achieves advantageous cost and risk structures, and enables significant value capture by the business that generates and deliver products and services. Johnson et al. (2008) point out that a common misunderstanding is an interchangeable use of the term profit formula and

business model. In consistency with the majority of other authors reviewed, they emphasize that how to make profit is only one part of the business model.

Morris et al. (2005) identified that there are different approaches for understanding business model definitions. Morris et al. (2005) analysed 30 business model definitions and identified three general categories of definitions based on their principal emphasis. These categories are viewed as levels, where the highest level is to be understood as a more comprehensive perspective of the business model concept than the lowest. This is shown in figure 8:



**Figure 8:** Categorization of business model definitions  
Source: Morris et al. (2005)

At the economic level, profit generation is the predominant concern and revenue sources, as well as cost structures, are among the relevant decision variables. The operational level involves a model representing an architectural configuration and includes decision variables such as knowledge management and logistical streams. Mayo and Brown (1999; in Morris et al., 2005) describe the operational level as “the design of key interdependent systems that create and sustain a competitive business” (p. 727). Lastly, the strategy level includes creating competitive advantages and sustainability are important aspects at the strategic level. Accompanying central factors are differentiation, vision and values.

### 3.2.2. Business model innovation types

As a uniform definition of business model innovation has not been established, a clear distinction of the accompanying innovation types neither exists. A number of commonalities between literature’s definitions of business model types were however discovered and found to be distinguishable based on the innovation’s level of impact. Based on this, five business model innovation types were identified. These are summarized in table 3.

*Table 3: Overview of which papers include the different business model innovation types*

<b>Level of impact</b>	<b>Innovation type</b>	<b>Papers including the innovation type</b>
<b>Low</b>	Innovating revenue generating mechanisms	Amit & Zott, 2012; Giesen et al., 2009; Teece, 2010
<b>Low/Medium</b>	Innovating a business model component	Amit & Zott, 2012; Taran et al., 2015; Teece, 2010
<b>Medium</b>	Innovating the organization of business model components	Amit & Zott, 2012; Taran et al., 2015; Teece, 2010
<b>Medium/High</b>	Innovating collaborations and partnerships	Amit & Zott, 2012; Giesen et al., 2009; Teece, 2010
<b>High</b>	Innovating the competitive environment	Giesen et al., 2009; Taran et al., 2015

The first type of innovation relates to a specific component of the business model; how revenue for the firm is generated. This type of innovation involves changing the value proposition and the pricing model to innovate how the company makes money (Giesen et al., 2009). According to Giesen et al. (2009) this is the simplest form of business model innovation. Amit and Zott (2012) highlight that companies must ensure that other innovations complement the revenue model. This claim is supported by Teece (2010), who states that a realistic and viable revenue architecture is the foundation for business model innovation.

The next level of impact of innovations to business model is innovating any component within the business model. Amit and Zott (2012) refer to innovation of a business model component as “content innovation” where novel activities are added to the selection of activities. Teece (2010) similarly calls this “activity innovation” and defines this innovation type as adding a set of horizontal or vertical activities that are complementary to existing activities. Taran et al. (2015) on the other hand take a different approach. They define this



innovation type as “the newness” of each business model component and present a measure of this innovation by considering the innovation’s level of radicality.

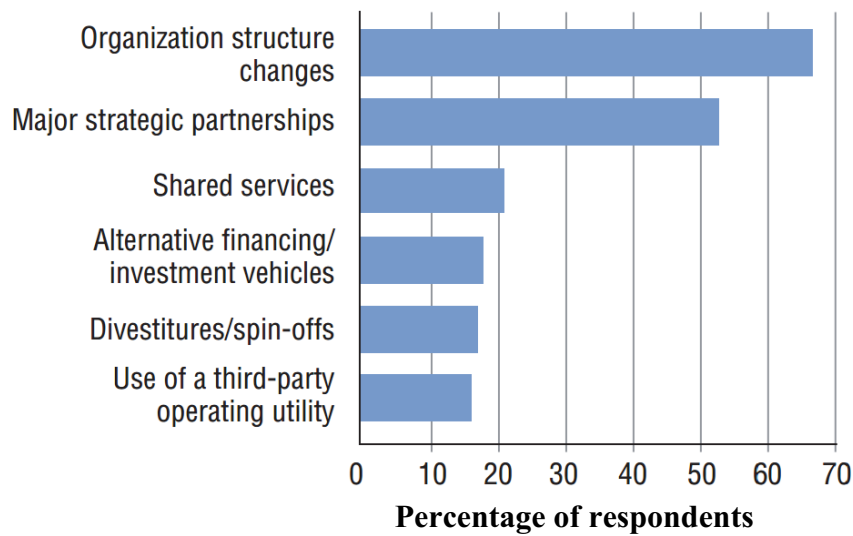
Thirdly, the organization of components within the business model can be innovated. Amit and Zott (2012) regard this as innovating the structure of the business model by linking activities and sequencing them in novel ways. Another definition, provided by Teece (2010), is assessing the value chain as to whether and how activities can be performed cheaper to enable profit and avoid bottlenecks. This innovation type also referred to as an architectural innovation by Taran et al. (2015). Taran et al. (2015) further highlight that this innovation type involves adapting several business model components and that its impact can be measured from the proportion of business model that are changed. They refer to this as level of complexity.

Innovation of collaborations and partnerships supporting the business model is the fourth possibility. Even though the innovation type is referred to as “governance innovation” (Amit & Zott, 2012), “enterprise innovation” (Giesen et al, 2009) and “network innovation” (Teece, 2010), the descriptions the authors provide convey the same meaning. These three papers define this type of innovation as evaluating and changing the way the organization operates and the parties that perform the activities. This also involves rethinking the organizational boundaries, i.e. weighing in-house activities to collaboration or partnering. In addition, deciding whether to conduct lateral or vertical integration and choosing the formal structure of who should perform which activities is part of this innovation type.

The fifth innovation type, at the highest level of impact, is innovating the competitive environment related to the business model. The least advanced form of this innovation type involves moving into a new industry for the company, whilst more advanced innovations can redefine an existing industry or create an entirely new one (Giesen et al., 2009). Giesen et al. (2009) refer to this innovation type as industry innovation, which can be misleading since the innovation does not necessarily innovate the industry. A better way of considering this innovation type is as Taran et al. (2015) argue; by considering the innovation from the newness of innovation in terms of “new to whom”. Taran et al. measure this on a scale from new to the company, industry, market or the world.

According to IBM Global Business Services (2006) there are certain innovation types that are more common to implement. IBM’s Global CEO study from 2006 revealed the following results for respondents that had innovated their business model;

### Most common business model innovations



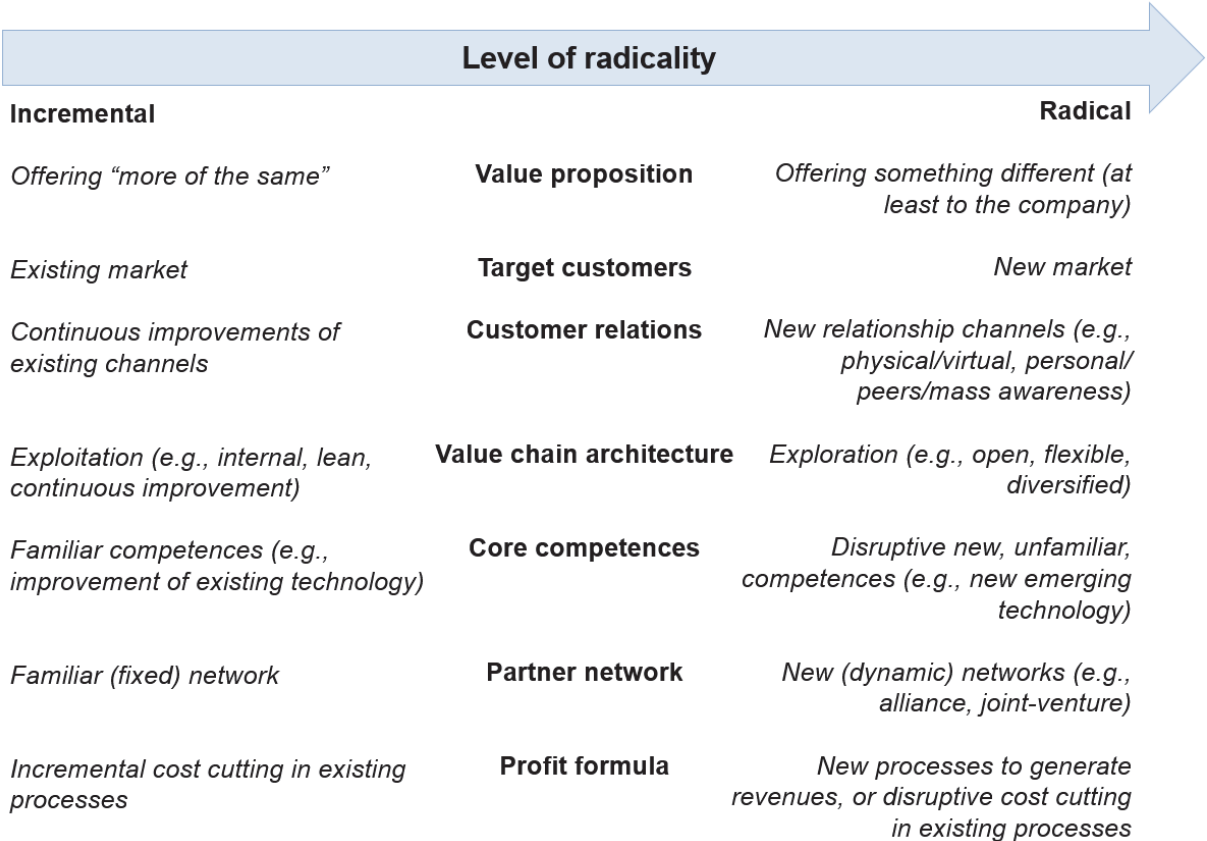
**Figure 9:** Most common business model innovations

Source: IBM Global Business Services, 2006

Clearly, the innovation types with medium impact, innovating the organization of business model components, and medium to high impact, innovating collaborations and partnerships, were the most common among the surveyed companies in 2006. Innovations regarding alternative financing/investment vehicles were identified as the fourth most important by IBM's Global CEO study. The business model innovation type is highly relatable to the low impact business model innovation type that was earlier identified; innovating revenue generating mechanisms. Giesen et al. (2009) argue that innovating collaborations and partnerships, as well as innovations to the competitive environment, statistically outperform innovations to the revenue model. That innovations to collaborations and partnerships were found more common than innovations in the revenue generating mechanisms in IBM's Global CEO Study is therefore not surprising. Giesen et al. also highlight that innovating collaborations and partnerships are especially useful during economic downturn to reduce costs and increase flexibility. They further claim that innovations to the competitive environment are recommended after longer periods of economic expansion when access to finance is better and willingness to take risk are higher. The IBM Global CEO Study did however not point to any specific results regarding this innovation type.

The level of impact of the innovation types presented in this section can be seen in relation to the distinction between incremental and radical changes. This is a common topic in business model innovation literature. Taran et al. (2015) present several characteristics to describe the radicality of a business model innovation in relation the each of the business model

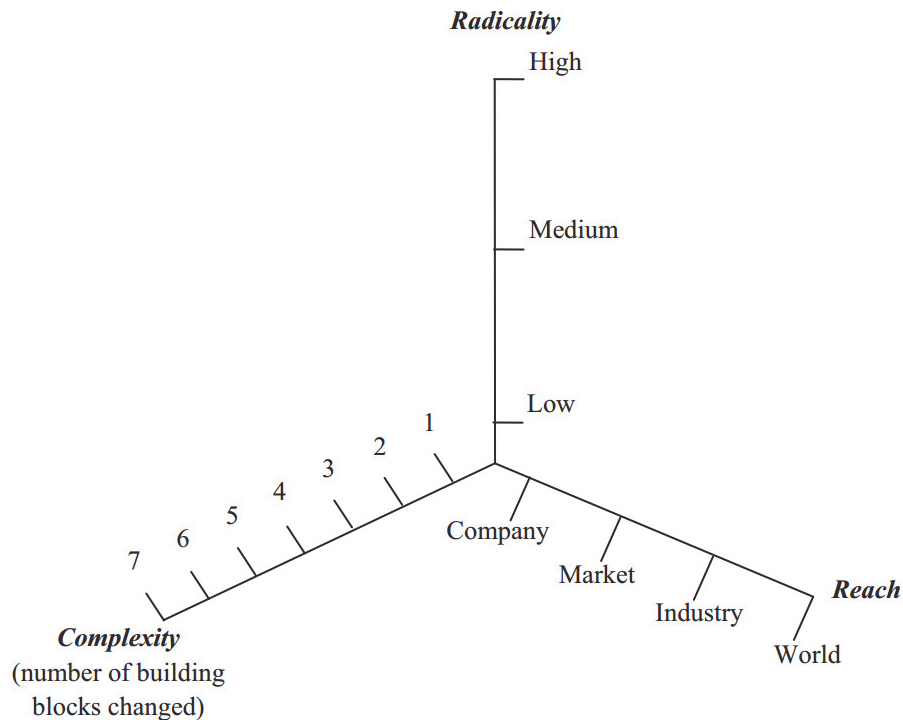
components that they defined. As with the literature in general, the authors distinguish between incremental and radical business model innovations, but emphasize that innovations must be evaluated from their level of radicality and not necessarily as one of the two extremes. Figure 10 summarizes their insights.



**Figure 10:** Characteristics of incremental and radical innovations  
*Source: adapted from Taran et al. (2015)*

In relation to this, Taran et al. (2015) present a perspective that can be considered to combine the earlier presented level of impact and level of radicality of business model innovations. The level of impact that was identified as a distinction between business model innovation types is by Taran et al. (2015) represented by two innovativeness characteristics; level of complexity and the level of reach. The authors measure level of complexity in the number of components of the business model that are changed and level of radicality on a range from company to market, industry and the world. In combination with the level of radicality the authors visualize business model innovations on three axes. Figure 11 shows Taran et al.’s (2015) graphical representation.

## A three-dimensional scale for business model innovations



**Figure 11:** A three-dimensional scale for business model innovations  
Source: Taran et al. (2015)

### Key points 3.2

#### *Business model components and business model innovation types*

##### **Business model components**

- Value proposition, profit/revenue generation and value chain architecture are recurring business model components in literature
- Business model definitions can be categorized either at a strategic, operational or economic level

##### **Business model innovation types**

- Business model innovation types can be distinguished from their level of impact and level of radicality
- The most common business model innovations are related to collaborations and partnerships and organization of business model components

### **3.3. Business model approaches and business model innovator strategies**

#### **3.3.1. Business model approaches**

Similar to the different levels of business model definitions, the selected literature also shows different approaches to how business models are applied within a firm.

Demil and Lecocq (2010) present two ways of approaching the firm's business model with the aim of producing the value proposition to customers; the static approach and the transformational approach. Having a static approach involves viewing the business model as a recipe for how its components interact with one another. This view helps describe how an organization functions and generates revenues. Hence, the static view assists managers in understanding the relation between the firm's business model and its performance. A transformational view on the other hand involves viewing the business model as a tool to address change and to focus on innovation. Demil and Lecocq (2010) argue that these two approaches fulfil different functions. They emphasize that their strengths could be integrated into a combined approach to reap more of the benefits related to both approaches.

Zott and Amit (2010) view the firm's business model as an activity system, defined by them as; "a set of activities, as well as the resources and capabilities to perform them, either within the firm, or beyond it through cooperation with partners, suppliers or customers" (p. 217). This can be understood as an expression of how to systematize linkages between components. Further, an activity is defined to be; "an engagement of human, physical and/or capital resources of any party to the business model to serve a specific purpose toward the fulfilment of the overall objective."(p. 217). They argue that a business model can be viewed as a template of how a firm conducts business and how it delivers value to stakeholders. From this, they show clear similarities to the static view presented above by Demil and Lecocq (2010). Zott and Amit (2010) propose the activity system perspective as advantageous to use for firm managers. First, they claim that a focus on activities is a natural perspective for managers when deciding on business model design. Second, they argue that the activity system perspective encourages the firm to follow systemic and holistic thinking rather than concentrating on isolated, individual choices. Their paper emphasizes that managers should get the overall business model design right instead of focusing on optimizing details such as decisions about particular products.

Another relevant paper for this matter is provided by Casadesus-Masanell and Ricart (2010). They present a view of the business model concept in relation to strategy and tactics. They regard strategy as the choice of business model that the firm will compete with in the marketplace and the tactics as the residual choices that are empowered by the business model the firm employs. The business model is in this context argued to be a reflection of the firm's realized strategy, where choosing a particular business model means choosing a particular way to compete. Casadesus-Masanell and Ricart (2010) argue that in some cases, there is a one-to-one mapping from strategy onto business models. Thus a separation of these two concepts is not always necessary. A separation is however relevant when particular contingencies take place, like if actions from other industry actors influence the firm's strategy. In these cases, the firm's strategy must be modified. As a consequence, the business model must be reconfigured based on the new strategy. They further argue that the tactics make up competitive choices that are required to meet changes in the competitive environment. According to Casadesus-Masanell and Ricart (2010), tactics play a significant role in determining the amount of value created and captured by firms. The paper is therefore consistent with other authors' descriptions of a the business model by highlighting the purpose of a firm's business model; value creation for stakeholders. Casadesus-Masanell and Ricart (2010) show similarities to the business model view of Zott and Amit (2010) by claiming that the choices made by the firm constitute an activity system, i.e. the business model.

### **3.3.2. Business model innovator strategies**

Literature on business model innovations does not provide definitive approaches to how business model innovations should be implemented. However, some authors point to a collection of strategies firms tend to follow and to some extent highlight ideal types of business model innovator strategies for achieving competitive advantages and a high level of profitability.

Among the authors in this literature review, Chesbrough (2007) argues that improvements to a business model happens in stages of business model advancement and presents the stages as the Business Model Framework (BMF). The framework presents a firm's approaches to business model innovation ranging from basic, not very valuable, business models to more advanced and valuable models. The BMF consists of the six types of firm's business model innovator strategies described below;

- *Type 1 - Undifferentiated*  
The firm does not articulate a distinct business model, lacks a process for managing it and targets the price and availability segment.
- *Type 2 - Low/medium degree of differentiation*  
The firm lacks resources for maintaining their innovation's differentiation position and targets the performance segment.
- *Type 3 - Segmented*  
The firm focuses on internal innovations and has a business scope vulnerable to disruptive innovations.
- *Type 4 - Externally aware*  
The firm conducts open, informal exchange relationships to provide innovations.
- *Type 5 - Integrated*  
The firm engages in formal sharing and collaborations of innovation throughout the value chain.
- *Type 6 - Adaptive*  
The firm seeks innovations through partnerships and experimentation.

Chesbrough (2007) views business model innovator strategies on a scale based on the value the strategy creates. He claims that there is evidence that type 4-6 firms; externally aware, integrated and adaptive business model innovators, are valuable strategies. Still, Chesbrough (2007) highlights that these business model types only provide temporary advantages and must be constantly updated to create value for the firm. He also has a clear focus on external aspects and consider external involvement closely linked to the value of the business model innovation. His research is however not transparent and seems to lack empirical evidence, but the article has been actively used by other researchers and is therefore included in this review.

The next authors describing specific business model innovator strategies are Giesen et al. (2009). These authors take a relatively open approach to which types of business model innovator strategies should be preferred compared to the other evaluated authors. The researchers evaluated 28 cases of what they call "recognized innovators" in relation to organizations that either failed with attempted business model innovation or who have refrained to innovate their business model. Based on these insights, they discovered a set of characteristics for strong business model innovators which they refer to as the three A's. On average, firms that were successful with business model innovations scored twice as high on these capabilities than "failed" business model innovators. They argue that their "research has

shown that new and innovative business models can – and do – succeed independent of a company’s age, industry or geography” (Giesen et al., p. 8). Giesen et al. (2009) measure the success of implementing business model innovation in terms of the firm’s profit margins over a period of three years. The three A’s, Giesen et al. (2009) present are:

- *Aligned*

The firm enforces consistency across all dimensions of the business model that build customer value. Internally the firm leverages core capabilities and links organizational aspects to value proposition, while externally it establishes open, collaborations and partnerships.

- *Analytical*

The firm focus on creating foresight, and prioritize actions while measuring and tracking for rapid course correction. Internally it leverages differentiable business intelligence and uses real-time information strategically and externally, information across partners is integrated.

- *Adaptable*

The firm provides ambidexterity to explore, experiment and pilot models without putting the performance of existing business models at risk. Internally the firm leverages effective leadership, a culture for innovation and change capabilities to create operating model flexibility.

The researchers claim that combining the three A’s; aligned, analytical and adaptable, is the optimal and most powerful strategy to obtain a high profit margin, but that following any three also will be beneficial. Thus, compared to Chesbrough (2007) who considered several levels of strategies, Giesen et al. (2009) provide advice for what business model innovation strategies are preferred. In addition, Giesen et al.’s (2009) selection of strategies are not mutually exclusive, such as Chesbrough’s (2007) are. Therefore, the probability of successful business model innovation based on Giesen et al.’s insights must be considered in relation to the number of strategies a firm is able to implement. Furthermore, the strategies mainly concern internal strategies that will leverage the firm’s capabilities and create flexibility for the firm. The focus on how the firm’s network can be utilized to support business model innovations are to some extent limited in Giesen et al.’s (2009) work.

Taran et al. (2015), as opposed to Giesen et al. (2009), present a systematic review of business model innovator strategies based on an analytical. The firm’s business model



innovation efforts were placed on a continuum of an open or closed approach to innovation and a proactive (push) or reactive (pull) innovation strategy in relation to the innovativeness of the business model in terms of level of radicality, reach and complexity, which were shown in figure 11. Profitability was used as measure for successful business model innovation. The researchers studied 10 specific business model innovations within two manufacturing companies in Northwestern Europe to determine the success factors for business model innovators. The result from Taran et al.'s (2015) work provide a set of distinctive business model innovator strategies based on links between their three-dimension of radicality, reach and complexity of business model innovations:

- *Open/Proactive - Radicality: high; Reach: high; Complexity: low*  
The firm aims at reaching new industries or parts of the world by enhancing existing or acquiring new competences through e.g. licensing, spin offs, joint ventures or acquisitions, but limits risks by avoiding large changes to core business.
- *Closed/Proactive - Radicality: high; Reach: high; Complexity: high*  
The firm takes high risk by innovating and even disrupting their business model and core activities by replacing the business model or developing an additional business unit.
- *Open/Reactive - Radicality: low/high; Reach: high/low; Complexity: low/high*  
The firm is conservative and either implements incremental improvements to the business model to leverage their capabilities and reach new markets (*version 1*) or makes radical changes to develop new business model concepts through e.g. joint ventures or acquisitions (*version 2*).
- *Closed/Reactive - Radicality: low; Reach: low; Complexity: high*  
The firm makes continuous improvements to all or most components of the business model and limits risk by mainly governing and handling innovations internally or occasionally through outsourcing.

Through examining the fit among these three dimensions, Taran et al. (2015) identified that the first three types, open/proactive, closed/proactive and open/reactive, could be regarded as ideal business model innovator strategies to achieve a high level of profitability. Taran et al. (2015) provide a more thorough analysis of business model innovator strategies, with presented case studies and evidence for the findings than Chesbrough (2007). Similar to Chesbrough (2007),

Taran et al. (2015) point to mutually exclusive business model innovator strategies. The paper by Taran et al.'s (2015) consider the external aspects of business model innovations to a larger extent than Chesbrough (2007) and Giesen et al. (2009) by focusing on open or closed approaches to innovation, instead of on a scale of external involvement or a specific capability. The distinction between proactive and reactive innovation strategies also differ by including an aspect of timing of business model innovations.

### **Key points 3.3**

#### *Business model approaches and business model innovator strategies*

##### **Business model approaches**

- To produce value propositions, the business model can be approached in either a static or transformational way
- The business model can be viewed as an activity system, as well as a concept in relation to firm strategy and tactics

##### **Business model innovator strategies**

- A collection of business model innovator strategies for achieving competitive advantages and a high level of profitability exists
- The categorization of business model innovator strategies differ between selected authors

## **3.4. Further perspectives on business models and business model innovations**

### **3.4.1. Competitive advantages from applying and innovating the business model**

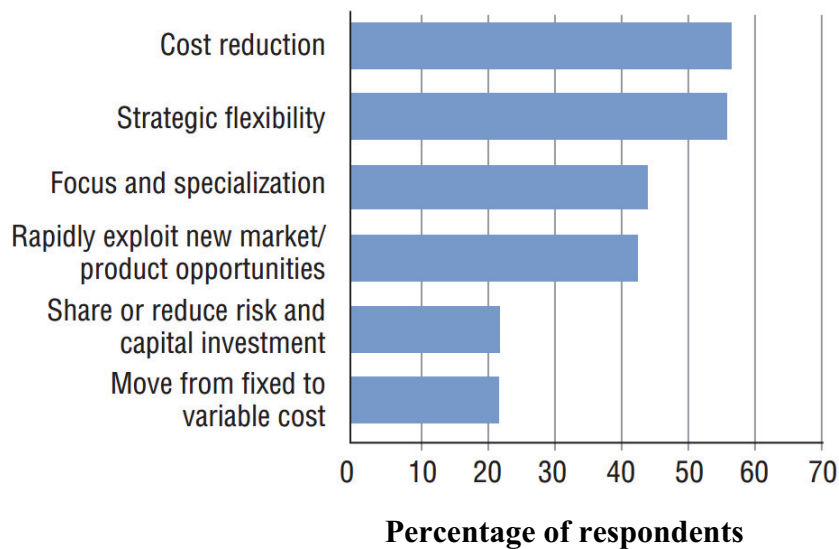
Several authors describe the importance of applying and innovating the business model in a deliberate manner to obtain competitive advantages. Markides and Charitou (2004; in Zott et al., 2011) describe the business model as a potential source of competitive advantage. Moreover, as previously presented, Casadesus-Masanell and Ricart (2010) view the business model as a means to make competitive choices and handle changes to the competitive environment. According to Teece (2010), innovating the business model is a prerequisite for creating value and is particularly important for firms to obtain a differentiable competitive advantage. Taran et al. (2015) support this claim, by stating that business model innovation is crucial for companies to maintain their competitive advantages. Amit and Zott (2012) state that

business model innovation is an “underutilized source of future value” (p. 42). They furthermore argue that business model innovation is a powerful approach to master competitive changes since it is a capability that is hard to imitate. Ensuring that the firm follows an appropriate business model innovator strategy should therefore, from these authors’ views, be of high priority for all type of companies.

According to the Global CEO Study conducted by IBM in 2006, CEOs consider business model innovations as only 30 percent of their innovation efforts, compared to 40 percent related to innovations in products, services or markets and 30 percent concerned with operational innovations (IBM Global Business Services, 2006). This emphasis on non-business model innovations might be misguided, as the same survey found that firms outperforming competitors with regards to operating margin growth were twice as focused on business model innovations as underperformers. In the report, outperformers were the top 50 percent of the study participants, whilst the bottom 50 percent were considered underperformers (IBM Global Business Services, 2006). The survey results also showed that companies involved in business model innovations achieved a five percent growth in operating margin, with significantly lower results for the non-business model innovators. Other authors who have investigated this matter are Mitchell and Bruckner Coles (2004). They reported that firms that repeatedly innovate their business model improved their competitive position more rapidly, in addition to obtaining faster growth in profit margins and revenues. Combined with IBM’s findings, there seems to be an indication of a relationship between business model innovation, operating efficiency and profitability.

According to the IBM Global CEO Study from 2006, successfully innovating the business model can lead to several advantages. Figure 12 illustrates their results.

### Benefits from adapting business model innovations



*Figure 12: Benefits from adapting business model innovations*  
*Source: IBM Global Business Services, 2006*

The benefits from adapting business model innovations are first and foremost regarded to reduce costs and increase strategic flexibility by the CEOs in IBMs study. The ability to focus and specialize and to rapidly exploit new markets/product opportunities was also considered as important benefits by the respondents.

#### 3.4.2. Timing of business model innovations

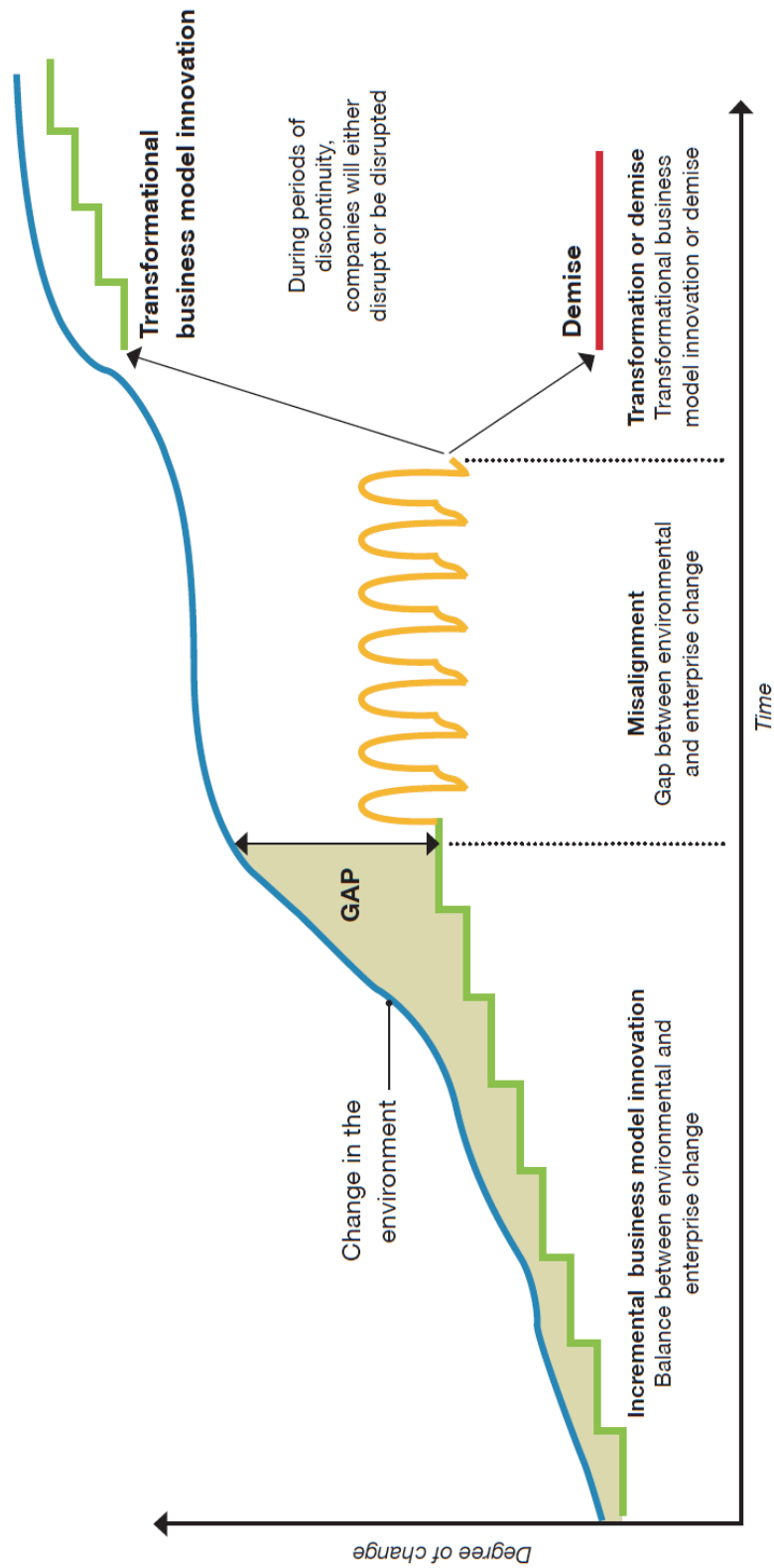
Despite the review of literature within business models and business model innovations, the question of when to implement these innovations still remains. According to Giesen et al. (2009), “successful timing of business model innovation depends on the economic environment, the specific market and industry conditions, and a set of internal factors impacting the organization” (p. 3). Giesen et al. (2009) further argue that both internal and external factors affect the demand for innovation of the business model and present a list of factors that can trigger initiatives for business model innovations in a company. The authors provide a set of questions to ask for each factor, which are presented in table 4.

**Table 4:** Internal and external factors that trigger initiatives for business model innovations  
Source: Giesen et al. (2009)

Factor type	Factor	Question(s) to ask
<b>Internal</b>	Product or service innovation	Are you taking a new product or service to market that requires a new set of skills, capabilities and processes that leads to a new value proposition and pricing strategy?
	Performance	Are you in a period of declining or negative growth relative to your industry?
	Resource availability	Are you delivering economic returns that provide the financial resources to make bold moves? Can you leverage the right skills and capabilities?
<b>External</b>	Value chain	Have there been shifts in your value chain such as the introduction of “direct” models or value migration along the value chain?
	New entrants	Are new market entrants introducing models that would disrupt your industry?
	Competitors	Do you see competitors introducing innovative propositions or models affecting your business?
	Customer preferences	Are customer preferences for goods, services or channels changing?
	Customer segments	Do you see new customer segments emerging that would require delivery of different products, services or delivery through new models?
	Technology	Are there disruptive new technologies emerging?
	Regulatory and legal	Has there been significant change to your regulatory environment regarding either industry or geography that affects your current business model?
	Environment	Are there social and environment sustainability factors that affect your current model?

Teece (2010) argues that innovations to the business model preferably should be triggered by internal initiatives, rather than external factors. Giesen et al. (2009) describe that changes to the external factors can lead to a misalignment between the environment and the firm's business model if the firm does not adapt accordingly. They illustrate the abovementioned scenarios as presented in figure 13.

### Business model innovation during periods of extensive environmental change



**Figure 13:** Business model innovation during periods of extensive environmental change  
 Source: Giesen et al. (2009)

In the case of misalignment, Giesen et al. (2009) stress that the outcome will either be that the firm will provide radical innovations that disrupt the industry or they will be disrupted by other firm's innovations. To illustrate the extent of this matter, the previously mentioned IBM Global CEO Study found that 40 percent of the respondents worried about competitors' business model innovations disrupting their competitive environment (IBM Global Business Services, 2006). To achieve the radical innovations needed to prevent disruption of the firm's business, Giesen et al. (2009) argue that transformational business model innovation is required.

With no significant change in the external factors, Giesen et al. (2009) believe incremental business model innovations are more appropriate. This is for example the case in stable economic situations. In economic downturn however, they consider the more radical, transformational changes necessary to address misalignment.

#### **Key points 3.4**

##### *Further perspectives on business models and business model innovations*

#### **Competitive advantages from applying and innovating the business model**

- The business model can be viewed as a potential source of competitive advantage
- Business model innovations are considered to be economically beneficial and to increase strategic flexibility

#### **Timing of business model innovations**

- Internal and external factors to the firm trigger business model innovations initiatives
- Especially misalignment with the competitive environment require transformational business model innovation to avoid the firm being disrupted

### **3.5. Evaluation of reviewed literature**

#### **3.5.1. Unclear definition of the business model concept**

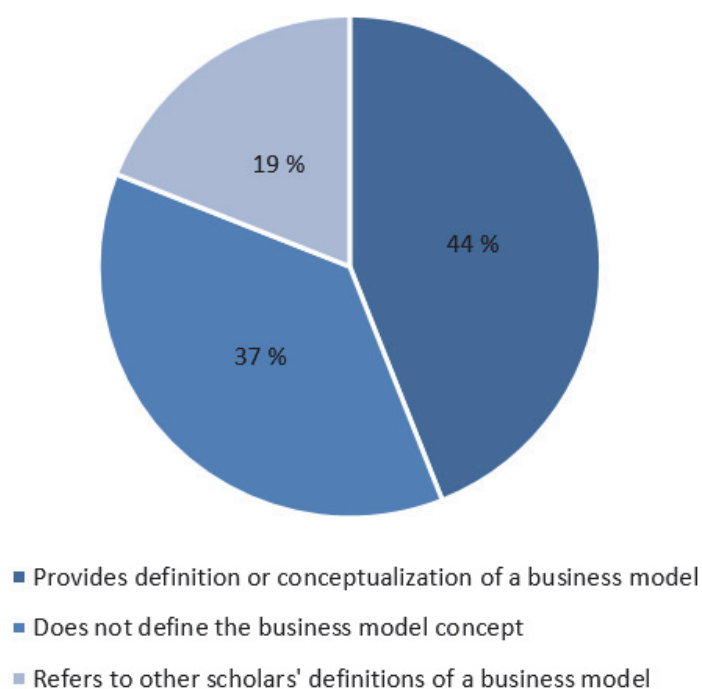
Nearly all of the papers concerning business model theory introduce a business model as a concept without strict definition boundaries. Value proposition, profit/revenue generation and value chain architecture are recurring definition components among all the papers reviewed. Still, these can be considered wide and undefinable terms. Their scope is also hard to delimit. How does one explain the content of value proposition in a way that makes it universally clear

in the literature and applicable for all types of businesses? Similar to this, suggested business model definitions such as; “a representation of a firm’s underlying core logic and strategic choices for creating and capturing value within a value network” (Schafer et al., 2012, p. 202) does not contribute to a clearer understanding. As the concept can be perceived as a general designation for how a firm works, it is difficult to understand the concept’s application areas, as well as its significance and value. This could make it hard to conduct and evaluate research on this field. From the literature that has been presented, we also find that there is a lack of empirical evidence concerning business model theory. The majority of the research are classified as either theoretical or as literature reviews. These papers are to a large extent based on qualitative analysis of existing literature. When excluding articles related to business model innovation theory specifically, only few out of the main papers in this thesis present case studies. In addition, the literature is perceived as quite descriptive where perspectives of business models are developed from the author’s point of view. This could lead to biased basis of literature for our thesis.

The above observations are consistent with Zott et al.'s (2011) finding that "the business model is often studied without an explicit definition of the concept" (p. 1022). More specifically, Zott et al. (2011) reviewed 103 business model publications found that and discovered that few authors actually define the business model concept. This corresponds to the literature reviewed in this paper. Figure 14 shows the distribution between the scholars' way of defining business models.



### Definition of the business model concept



**Figure 14:** *Definition of the business model concept*  
Source: Zott et al. (2011)

Zott et al. (2011) also highlight that existing business model definitions' partially overlap and that this incongruity allows many interpretations. They further state that the business model concept is used to explain several types of phenomena, "such as e-business types, value creation or value capture by firms, and how technology innovation works" (p. 1034). As researchers within different academic fields have used business models in different contexts, a clear understanding of the concept is not provided. In our literature review, we experienced that several papers have addressed the concepts of business model and strategy interchangeably. This misidentification is consistent with the literature applied in this thesis. To distinguish these terms, explanations such as; "the business model is the manifestation of the firm strategy" (Lambert and Davidson, 2012) and "a business model is a reflection of the firm's realized strategy" (Casadesus-Masanell and Ricart, 2010) are given by the reviewed papers. We find that these explanations are quite superficial and only vaguely guide how the difference should be understood. As Casadesus-Masanell and Ricart (2010) argue, in some cases there is a one-to-one-mapping of strategy onto business models. In these cases, distinguishing between the terms strategy and business model is presented as unnecessary, and by this, the authors contradict the views of several other authors. Their view does not contribute to a clearer understanding of the difference.

As a consequence of the irregularities in how the business model concept is defined and applied, Zott et al. (2011) state that "the term business model in its current use is not one concept; it is many concepts" (p. 1034). The researchers claim that the wide scope of definitions of business models has slowed the development of a consistent theory within business models. It is however expected that a relatively new field of research will have disagreement across scholars and that the current inconsistencies is a step in the process of making a uniform definition of business models, Zott et al. (2011) argue.

### **3.5.2. Diverging approaches to business model innovation**

Regarding the term business model innovation, the literature review revealed that there is vagueness associated to when an organizational change is a business model innovation and if a business model innovation can be regarded as a process or an outcome. In this thesis both views were presented to allow both perspectives, as there is no finite answer to which definition is the most correct. Business model innovation as an outcome did however prove to be useful when defining the set of business model innovation types based on their impact.

Even though the authors had different naming conventions and focus areas, identifying types of business model innovations across research papers was possible. For example, Amit and Zott (2010) and partly Taran et al. (2015) focus on innovation of activities and the system that forms them, while Teece (2010) represent a more classic supply chain view of business model innovations. Giesen et al.'s (2009) and Taran et al.'s (2015) also stand out with taking the innovation's impact on the environment into consideration in their definition of business model innovation types. There were also discovered some inconsistencies in how researchers view the pace of a business model innovation. As earlier discussed, whether the innovation is incremental or radical is a traditional distinction that might not be applicable to all types of business model innovations. In this paper, this view of innovation at two extremes was presented to highlight the characteristics of incremental and radical innovations. As this is a quite common distinction to make in a strategic context it is therefore considered sufficient to base these characteristics on Taran et al.'s (2015) view.

With regards to business model innovator strategies, the available literature was scarce. Due to diverging approaches in evaluating a firm's efforts to innovate their business model, defining business model innovator strategies is more challenging than identifying types of business model innovations. The authors' views were therefore used separately to evaluate the firm's business model innovator capabilities, strategy and what type of innovator the firm is. Even though the three presented theories on business model innovator strategies provide

individual perspectives, it is clear that some similarities are present for how firms succeed with business model innovations. Where Chesbrough (2007) defines adaptable as the highest form of business model innovator type, Giesen et al. (2009) point to being aligned with partners, which again is similar to Taran et al.'s (2015) view of an open innovator strategy as beneficial. It is therefore probable that collaborating with the external network is an important capability for achieving business model innovations. Moreover, Giesen et al.'s (2009) analytical and adaptable capabilities are highly related to Taran et al.'s (2015) descriptions of a proactive strategy. Thus, a proactive strategy consisting of throughout analyses and adaptability can be considered beneficial for achieving successful business model innovations. A source of confusion in the selected papers is that both Chesbrough (2007) and Giesen et al. (2009) use the term adaptable, but for different purposes.

### **3.5.3. Focus on high-technological firms and start-ups**

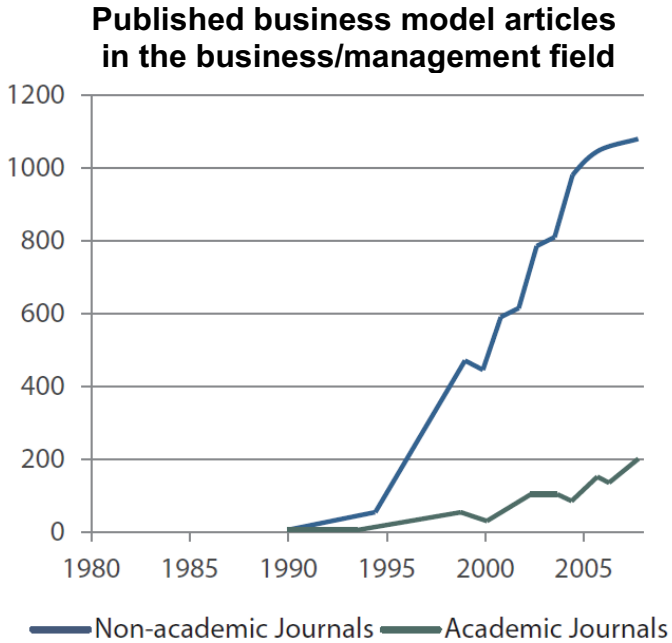
Regarding the business model literature reviewed, the concept's relevance for entrepreneurs is often enhanced, for example by Teece (2010) and Zott and Amit (2010). Teece (2010) states that "whenever a business enterprise is established, it either explicitly or implicitly employs a particular business model that describes the design or architecture of the value creation, delivery, and capture mechanisms it employs" (p. 172). Thus, while there is a clear link between having a functional business model and start-ups, how business models fit into established businesses is not clear. Taran et al. (2015) and another article by Amit and Zott (2012) do however view business model innovations in relation to more established companies, but these papers constitute a small proportion of all the reviewed papers in this thesis. Teece (2010) further enhances that keeping the business model viable beyond its start-up period is a continuous task.

Another observation from the reviewed literature is that the selected papers are largely concerned with high-technological firms. These firms are often involved in for example social media, telecom or an industry that delivers a disruptive value proposition to their customers. Examples of repeatedly mentioned firms are Apple, IBM, Dell, Southwest Airlines, Ryanair, Google, Microsoft, Amazon, Facebook, Skype, Starbucks and Zara, which Taran et al. (2015) refer to as "hypercompetitive firms". These firms are facing rapidly changing demands and thus dynamic capabilities, like mastering business model innovations, are necessary to sustain. They are also firms who disrupted their competitors and often created a new market or industry, which gave them first-mover advantages. Thus, they are financially strong and capable of implementing the changes needed. As Giesen et al. (2009) argue, industry model innovation,

i.e. disruptive innovations within an industry, “is more likely to be pursued by industry leaders with strong financial means and industry positions that can leverage bold moves to expand their leadership “ (p. 4). It is therefore not surprising that these type of firms successfully innovate their business model. These findings may therefore not be transferrable to other types of firms.

In relation to our findings, Zott et al. (2011) discovered, from their review of literature on business models, that the business model concept is addressed mainly in three areas; “(1) e-business and the use of information technology in organizations; (2) strategic issues, such as value creation, competitive advantage, and firm performance; and (3) innovation and technology management” (p. 1020). They claim that the first area, e-business and the use of information technology in organizations, has been given the most attention. To illustrate this, they found that nearly 25 percent of the 49 conceptual studies conducted on business models that were reviewed were related to e-business.

A reason why the focus on high-technological firms, start-ups and e-business has been widespread for business models is the emergence of the Internet after 1993, Zott et al. (2011) claim.



**Figure 15:** *Published business model articles in the business/management field*  
 Source: Zott et al (2010); in Breiby & Wanberg (2011)

The graph in figure 15 clearly illustrates this, as the published articles within business models grew strongly after 1995. The business model concept’s prevalence in literature has been escalating ever since. Another reason is that technology in itself is not a value creator, as

Chesbrough (2007) argues. Supporting this claim, Zott et al. (2011) state that “besides embedding technology in attractive products and services, a firm needs to design a unique business model to fully realize its commercial potential” (p. 1033). They further argue that “in the technology and innovation management field, the business model is mainly seen as a mechanism that connects a firm’s (innovative) technology to customer needs and/or to other firm resources (e.g., technologies)” (Zott et al., 2011, p. 1034). Thus, the emergence of internet and customer demand changing at a faster pace has increased the relevance of business models.

This strong focus on innovative, high-technological firms and start-ups can challenge the business model concept’s relevance for all types of businesses. In addition, that theory on business models is already incongruent and to some extent unclear, further questions how relevant business models are for all type of companies.

#### **3.5.4. Uncertain link between business model innovation and profitability**

The presented perspective to business model innovations as a valuable approach to achieve competitive advantages might be biased. Studies presenting a view that challenges the assumption that applying innovating business models can provide competitive advantages have not been identified in this literature review. We however argue that the included authors; Chesbrough (2007), Giesen et al. (2009), Taran et al. (2015), Teece (2010), Amit and Zott (2012), Markides and Charitou (2004; in Zott et al., 2011) and Casadesus-Masanell and Ricart (2004), constitute a sufficient group of authors for this thesis. Hence, there is reason to believe that their conclusions to some extent can be considered generalizable.

A weakness of our selection of papers concerning business model innovator strategies is that they are all based on the assumptions that innovating the business model is beneficial. Also, the papers’ level of empirical evidence differ. Chesbrough (2007) for example only provides a theoretical approach to business model innovations as a competitive advantage and does not present empirical findings for the business model innovator strategies he presents. Furthermore, the author does not directly link the business model innovator strategies to profitability. The only link that is indicated is the value the strategies can provide. Taran et al.’s (2015) is also first and foremost a theoretical article that develops a typology for business model innovations. The case study behind their conclusions is considered to some extent scarce, as they are based on only ten retrospective case studies from two industrial companies’ business model innovations. Still, these ten case studies have great variety in the type of business model innovations and vary in their level of success. Therefore, they can be considered to provide a certain level of insights for the business model innovator strategies Taran et al. (2015) present.

In addition to this, Taran et al.'s publication is from 2015. It is thus evaluated as relatively new to the business model innovation literature. As a consequence of this newness, it has not yet reached a high level of citations, which often work as a good indication of the paper's relevance and applicability for other researchers. Whether this article provides theories that are relevant can therefore be questioned.

Giesen et al. (2009) is a private executive report for IBM and therefore does not have the same obligations to support their claims as a scientific paper. Still, Giesen et al.'s view on business model innovator strategies is considered objective and relevant for other purposes than IBM alone because of the empirical evidence of the report's case study. In addition, how internal and external factors affect firms and how misalignment and disruption influence business model innovation efforts are considered useful for this thesis' purpose. The IBM's Global CEO Study presented by IBM Global Business Services (2006) is also to some extent biased. Still, we find that the basis for empirical results in the survey is evaluated as credible, as it is a major research program including in-depth interviews with 765 companies spanning 20 different industries and 11 geographic regions. The empirical grounding from the IBM Global CEO Study is at the same time 10 years old. It is possible that the insights from their study are less relevant to this date.

In summary, there are indications that the literature reviewed addressing business model innovation in the context of profitability is not sufficient for making definite conclusions. For this research's purpose, these papers have still been used as to provide a basis of discussing business model innovations.

## **3.6. Framework**

### **3.6.1. Business model framework**

To address the part of this thesis' research question concerning how Norwegian maritime actors apply their business models, this section provides a set of expectations;

#### **Expectation 1a: Congruence between business model components in literature and in practice**

The first part of the business model framework considers whether there is congruence between business model components in literature and in practice. We wish to identify any congruence based on the following components;

- *Value proposition*
- *Profit/revenue generation*

- *Value chain architecture*
- *Competitive strategy*
- *Target customer*

From the review of the maritime industry it is clear that maritime actors have experienced a good economic period over the last 10-15 years, with high demand and financial strength in the industry. It can be argued that any type of activity related to oil and gas would generate income during this period. Thus, there is reason to believe that having a defined *value proposition* and deliberate focus on the business model concept has been considered unnecessary by maritime actors. It could therefore be that there is a gap between the literary view of business model components and how their structure works in practice in the maritime industry. Still, the maritime review stressed that the maritime actors are faced with a continuous pressure of realignment through the cyclical nature of the industry. In addition, the current situation is challenging for the maritime actors because of the overcapacity in the market and the low oil prices. The current need to adapt to the changes in the maritime industry might make application of business models more relevant. It is therefore considered reasonable to believe that maritime actors currently have a more deliberate relation to how their firm works in order to deliver and capture value. As the research for this paper is conducted during 2016, a situation with an extraordinary need for realignment, this relation can be perceived as especially important. Based on this, we propose the following expectation;

**1a:** There is congruence between the structure of the business model components in literature and in practice for maritime actors.

**Expectation 1b: Approach to business model definition**

The second part of the business model framework considers the maritime actor's approach to their business model definition. As there exists different views, we wish to identify approaches based on the levels presented by Morris et al. (2005);

- *Economic*
- *Operational*
- *Strategic*

In this part, we find it appropriate to address the differences between the types of maritime actors. As previously described in the maritime industry review, the shipping companies and their owners are considered the engine of the maritime industry. They initiate the demand for

vessels and thus influence the demand for services the other maritime actors provide. It is therefore reason to believe that the shipping companies view their business model in a *strategic* manner compared to the rest of the maritime actors. The rest of the actors are therefore considered to correspond with the *operational* or the *economic* level. From this, we suggest the following expectation;

**1b:** The shipping companies view their business model in a more comprehensive manner than the remaining maritime actors.

### **Expectation 1c: The use of business models**

The third part of the business model framework considers the maritime actors' use of their business model. As confusion in terminology is prevalent in the business model literature, we wish to identify whether maritime actors distinguish between the following concepts;

- *Strategy*
- *Business models*

In this case, indications of what to expect from findings are vague. Based on the prevalent misidentification described in the existing literature, we believe it is more likely to find an overlap between *strategy* and *business model* concepts, rather than a clear distinction, within the maritime actors. Supporting this belief, the *business model* concept is relatively new in managerial spheres and it is therefore reasonable to expect that the mentioned distinction has not manifested itself yet in an established industry such as the maritime. We therefore formulate the following expectation;

**1c:** There is an overlap between the use of the concepts *strategy* and *business model* for maritime actors.

### **3.6.2. Business model innovation framework**

To address the part of this thesis' research question concerning how maritime actors in Norway innovate their business models, this section provides a set of expectations.



### **Expectation 2a: Level of external involvement to achieve business model innovations**

The first part of the business model innovation framework considers the level of external involvement to achieve business model innovations for the case firms. This part will be evaluated based on the strategies presented by Chesbrough (2007);

- *Type 1 - Undifferentiated*
- *Type 2 - Low/medium degree of differentiation*
- *Type 3 - Segmented*
- *Type 4 - Externally aware*
- *Type 5 - Integrated*
- *Type 6 – Adaptive*

From the maritime industry review, it was clear that the industry is characterized by its cluster culture, which allegedly leads to widespread collaborations and information sharing across the maritime actors. As there are close ties between these actors, it is expected that many of the maritime firms will have high external involvement. It is therefore reasonable to expect that both informal and formal relations as well as partnerships are present. From this, *type 5, integrated*, or *type 6, adaptive*, could be present. As the focus on experimentation is not considered to be prominent in the maritime industry, we consider *type 5, integrated*, relevant.

Characteristics from the maritime industry review also indicate that some maritime actors will fit non-favourable categories for achieving business model innovations. Due to the competition from Asia, price can be a differentiator for many maritime firms. *Type 1, undifferentiated*, with a focus on price sensitive segments could therefore be relevant. However, as Norwegian maritime firms overcome this by focusing on quality and functionality, they rather target the performance segment of the industry. Due to this, *type 2, low/medium degree of differentiation*, can be more prevalent. This type fits well with the current situation where a lack of resources can limit their ability to implement and maintain business models. Consequently, we formulate the expectation for this section;

**2a:** The maritime actors are considered either *type 5, integrated*, or *type 2, with low/medium degree of differentiation*.

**Expectation 2b: Types of innovation capabilities that is leveraged to achieve business model innovations**

The second part of the business model innovation framework will regard which innovation capabilities that are leveraged to achieve business model innovations within the case firms. The capabilities are based on Giesen et al.'s (2009) insights for profitable strategies;

- *Aligned*
- *Analytical*
- *Adaptable*

The cluster culture and collaborations between the maritime actors is considered an important indicator of what capabilities the maritime firms are expected to have. Many of the maritime firms focus on maintaining extensive knowledge within their business areas and deliver high quality products to avoid price competition. Consequently, the capability of being *aligned* is likely to be present among the maritime actors. However, it is reasonable to believe that creating customer value might not be a clearly expressed strategy. Thus, the link between value proposition to organizational aspects to achieve consistency that literature describes for *aligned* firms is considered to be weak for maritime actors. Based on this, we expect the *aligned* capability to be present, but only to a medium degree.

Most firms conduct analyses and use market information for decision making. Still, we find it likely that the maritime firms to a larger extent are rather guided by traditions and key personnel's knowledge of the market. Therefore, we do not expect the *analytical* capability to be present in any significant degree. Similar to this, we do not find it likely that experimentation is a large part of the maritime firm's strategy due to the conservative nature of their industry. The culture for innovation and ability to identify new, innovative solutions is prone to be present only among a few individuals in the maritime firms. In Norway, these individuals are to a large extent expected to be the owners as they are allegedly strong leaders driving their firm's future development. The *adaptable* capability is therefore not expected to present in a large degree. Based on this, we summarize our insights in the following expectation.

**2b:** Of the *three A's*, the *aligned* capability, is the most prominent among maritime actors.

**Expectation 2c: Type of business model innovator strategy that is applied to achieve business model innovations**

Thirdly and lastly, the business model framework will evaluate the case study based on the type of business model innovator strategy that is applied to achieve business model innovations. The innovator strategies in this section will be based on Taran et al.'s (2015) theories;

- *Open/proactive*
- *Closed/proactive*
- *Open/reactive*
- *Closed/proactive*

For the maritime firms, it seems more likely that the *open* characteristic rather than *closed* characteristic is common, because of the widespread perception of the maritime industry being based on cluster culture and collaborations. As the maritime industry can be perceived as somewhat conservative, it is reasonable to believe the *reactive* characteristic will fit better than the *proactive* characteristic. Therefore, it should be probable that most maritime firms can be evaluated as *open/reactive*. The characteristic of *version 1* of this type of business model innovator strategy, with incremental changes to the business model to reach new markets, is considered highly applicable for the maritime firms. As radical changes are not expected to be prevalent in the maritime industry, *version 2* is considered less likely. Even though joint ventures and acquisitions may occur during this economic downturn period and suggest applicability of *version 2*, *version 1* is considered the most applicable. Some maritime firms might also be *proactive* business model innovators, at the same time as being *open*. Limiting risks to the core business through enhancing existing or acquiring new competences is seen as common for maritime firms. Regarding the propensity to create innovations with high reach, the maritime firms are highly international and thus the *open/proactive* characteristic can at some level be applicable.

Regarding the non-favourable strategy of being *closed/reactive*, this category may be applicable to many maritime actors because continuous improvements can be considered common. Firms might refrain from sharing information about their innovations during economic downturn. This strategy is however not expected to be as prevalent as the *open* strategies, since achieving innovations internally is considered less likely for the maritime actors because of the previously mentioned cluster network importance. Therefore, *closed/reactive* is not expected to be present to the same extent as the *open/reactive* and *open/proactive* strategies. The last category, *closed/proactive*, is considered highly unlikely for

maritime firms because as earlier argued the *open* and *reactive* characteristics are the most relevant. For example, taking high risks by radically changing large parts of their business models is not likely because the maritime actors are considered traditional and conservative with regards to their business development.

Thus, we have the following expectation for this section;

**2c:** For maritime actors, the *open* strategies are the most relevant, with the *open/reactive, version 1*, considered as more likely compared to the *open/proactive* strategy.

### 3.6.3. Profitability framework

To address whether there is a link between the business model and business model innovation approaches and profitability, this section provides an accompanying expectation. As we did not find relevant literature concerning the link between firms applying their business model and profitability, this will be based on the link between ideal business model innovation strategies and profitability.

#### **Expectation 3: How ideal strategies translate into profitability**

Based on the insights from the selected papers, in the context of profitability, we will evaluate to what extent the maritime actors fit the ideal business model innovator strategies identified in literature. An ideal type of business model innovator strategy is in this thesis considered the most profitable strategy for a firm to follow.

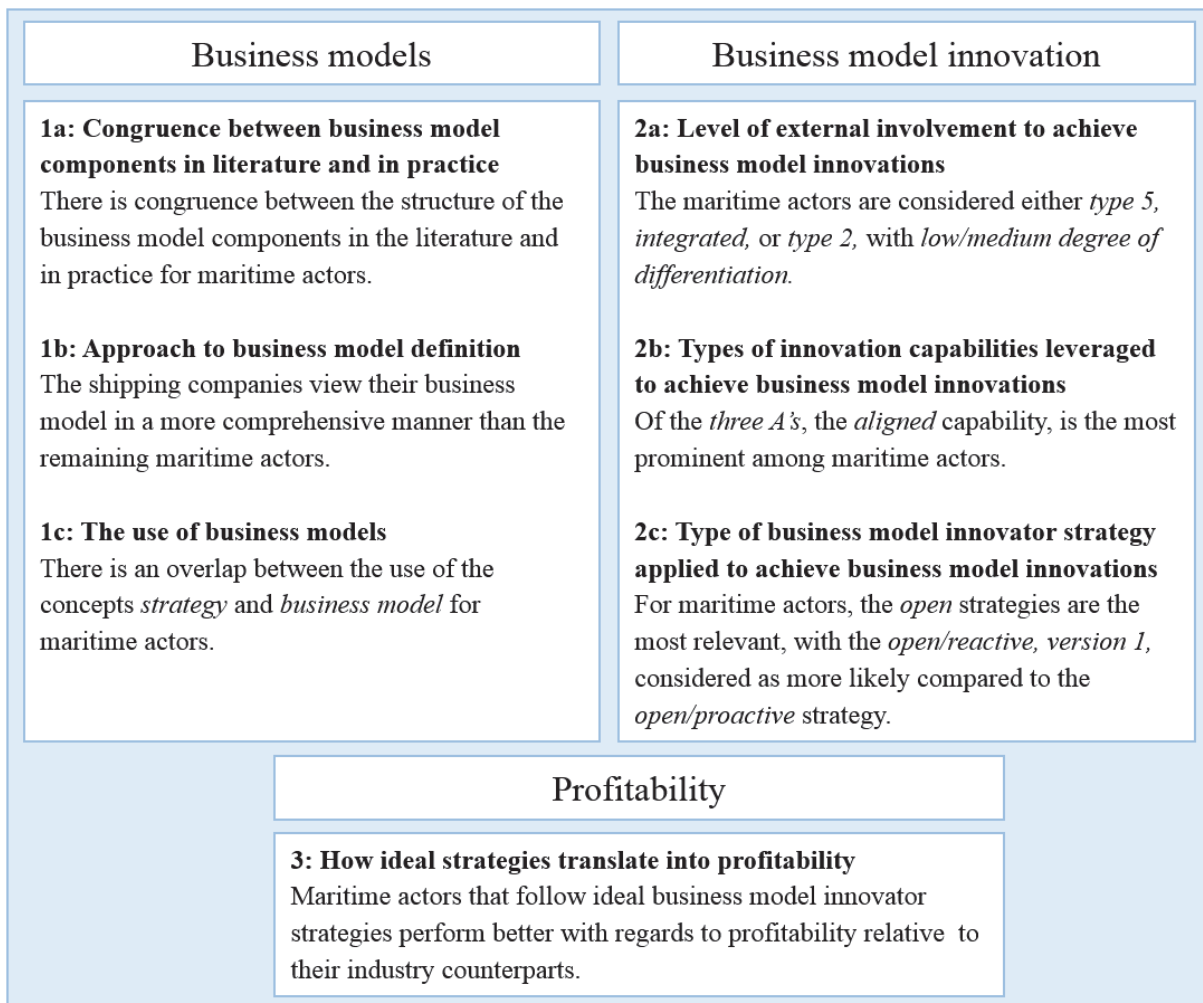
- Chesbrough's (2007) theory of *type 4, undifferentiated, type 5, integrated* or *type 6, adaptive*
- Giesen et al.'s (2009) *three A's; aligned, analytical* and/or *adaptable*.
- Taran et al.'s (2015) categorization of *open/proactive, closed/proactive* or *open/reactive*

Giesen et al. (2009) and Taran et al. (2015) clearly indicate a link from their business model innovator strategies to profitability, whereas Chesbrough (2007) indirectly links the firm types to their level of the value they create. In this thesis, Chesbrough's (2007) insights of valuable business model innovator strategies are considered relatable to profitability. The extent of ideal strategies applied in the case firms will therefore imply a link to profitability in our framework. In the latest section about the business model innovation framework, we expected that many of these ideal strategies will be present among the maritime actors. More specifically, type 5,

*integrated*, the *aligned* capability and the *open/reactive* strategy were expected to be the most prominent. We therefore present the following expectation;

**3:** Maritime actors that follow ideal business model innovator strategies perform better with regards to profitability relative to their industry counterparts.

### 3.6.4. Summary of the thesis' framework



*Figure 16: Expectation to case study findings*







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## 4. METHODOLOGY

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In this section, the methodology used in this thesis is presented. First, we present our choice of research design followed by a description of our literature review and the development of our framework. Then, we provide an overview of how the data collection was conducted. An evaluation of our research methods and critical reflections is presented in the end.

### 4.1. Research design

This thesis' research question concerns how Norwegian maritime actors apply and innovate their business models, and whether there is a link between their approaches and profitability. To answer the first part of our research question, a qualitative research strategy was chosen. As Bryman (2012) argue, qualitative research tends to be concerned with words rather than numbers. Moreover, it allows the interview objects as the point of orientation and a close involvement between the researcher and the people being investigated (Bryman, 2012). Based on this, a qualitative research design was considered appropriate. To be able to compare the different maritime actors, a case study was performed. In order to relate the findings from the case study to the actors' profitability, a quantitative approach was chosen.

### 4.2. Literature review

*Parts of the section have been taken and in some cases adapted from Fiksdahl and Wamstad (2015) as the procedure used is similar.*

To become familiar with the existing literature on this study's area of interest, a literature review was conducted. From this, we wished to better understand what is already known about this area, if there are any inconsistencies or common understandings in the existing findings and which areas of application it has. In order to answer our research question, theories of business models and business model innovations were chosen as most appropriate to address. The literature review performed in this thesis can be characterized as a narrative review. This is a less focused and wide-ranging approach than a systematic review, and involves a reasonably comprehensive assessment and critical reading of the literature (Bryman, 2012). We chose this approach to get an overview of the chosen fields by reviewing different perspectives and insights from different authors while at the same time evaluating its relevance to the aim of our study.

We conducted our literature search through several steps. First, we selected the relevant databases. As we had good experience with using Scopus, Oria and Google Scholar during our specialization project in the fall of 2015, we continued to use these search engines in this thesis. We then chose the relevant keywords. Concerning the business model concept, relevant keywords were business models, business model design and business model structure. Relevant keywords for business model innovation were business model innovation, business model innovation typology and business model innovation process steps. The following is an example of how the article by Taran et al. (2015) was selected. First, the keywords “business model innovation” was used in the search string in Oria. This generated 46 992 results. In order to limit these results, we added a search field with the keyword “typology”. From this, the results were reduced to 178. By sorting these findings by relevance, the article by Taran et al. (2015) was chosen. In addition to finding articles by directly searching in the mentioned databases, some articles were found in a different way. When an article is downloaded in Oria, Scopus and Google Scholar, the database recommends similar articles. We found Lambert and Davidson (2014), Mitchell and Coles (2004) and Giesen et al. (2009) using these recommendations.

After the targeted keyword search in the databases, we selected the relevant articles. This process started with reading the articles’ abstracts and from this, identifying signs of relevance. Further, both the executive summary and conclusions in the articles were read and evaluated. The research methods used were also assessed in order to secure credibility. Our main evaluation criterion for the selection process was whether the relation between the articles’ findings as well as their contribution and the aim of our study was consistent. Other criteria were the number of citations and the significance of the author. An example of the latter is when we selected Teece (2010) to be a part of our literature review. By reading articles regarding business model theory, we experienced that Teece (2010) was repeatedly cited through several relevant articles. We therefore considered this to be a central article for our paper. After we had selected all the articles, the chosen literature was then systematized into folders categorized by topics. Lastly, after the articles were utilized and the literature review was conducted, we evaluated the selected literature in a critical perspective. From this, we wanted to uncover any shortcomings or weaknesses that should be addressed while using the findings from this literature. Also, the evaluation included a comparison of the articles’ contribution in order to provide an overall picture of the reviewed literature.

### 4.3. Framework

In order to answer our research question, we provided a framework in the end of the literature review. Here, expectations were developed based on the literature review and the maritime industry review. The goal of this framework was to create a structure to be resumed in the discussion and enable the thesis to answer the research question.

First, to evaluate how Norwegian maritime actors apply their business model, the following three expectations were developed;

- There is congruence between the structure of the business model components in literature and in practice for maritime actors
- The shipping companies view their business model in a more comprehensive manner than the remaining maritime actors
- There is an overlap between the use of the concepts *strategy* and *business model* for maritime actors

Second, to evaluate how Norwegian maritime actors innovate their business model, the following three expectations were developed;

- The maritime actors are considered either *type 5, integrated*, or *type 2*, with *low/medium degree of differentiation*.
- Of the *three A's*, the *aligned* capability, is the most prominent among maritime actors.
- For maritime actors, the *open* strategies are the most relevant, with the *open/reactive, version 1*, considered as more likely compared to the *open/proactive* strategy.

Third, to address whether the above approaches are linked to profitability, the following expectation was developed;

- Maritime actors that follow ideal business model innovator strategies perform better with regards to profitability than their industry averages.

Further, the expectations from the framework were addressed in the discussion. The expectations were compiled with our case study findings and from this, scaled on a range from low consistency to high consistency between expectation and case study findings. In cases

where a case firm did not provide relevant assessment information, they were scaled as neutral. From this scaling, we were able to draw conclusions to our research question.

## **4.4. Data collection**

In this thesis, multiple sources of data were used. Interviews were conducted, quantitative data was extracted, as well as making use of secondary sources.

### **4.4.1. Interviews**

In this study, six interviews were conducted. We chose to select maritime actors from the categories shipping companies, shipyards and maritime equipment suppliers. The reason for excluding the maritime service provider category is that we do not consider these actors as purely maritime actors, but rather as facilitators for the rest of the maritime industry. To select which firms to interview, we started by collecting the largest actors in each maritime category, as these were firm names we already were familiar with. In order to cover a broader part of the industry, we wanted interviewees of different sizes, both in terms of employees and revenue. To find firms of a smaller scale, we used Google to search. When the relevant firms were selected, we contacted them via e-mail in order to schedule an interview. In this e-mail, we included information concerning the topic of this thesis and our aim with the interview. The e-mail was sent to a person in the management where this was possible. In other cases, the e-mail was sent to a general e-mail address for contacting the firm. To reach the most relevant employee, we specified that the firm preferably forwarded the e-mail to the right person if the receiving person was not the right one. Thus, we enabled the firm to decide which employee it could be relevant for us to meet. In the beginning of this process, we primarily contacted maritime businesses in Møre. The maritime cluster in Møre is described as Norway's leading maritime cluster and is considered one of few complete clusters. Our specialization project in the fall of 2015 was concerned with this cluster and it was therefore an obvious region to contact in order to arrange the interviews for this study. Surprisingly, only one out of 10 firms located in the Møre area agreed to participate in this study. Several answered that they needed a complete focus on surviving the current challenging times. We then contacted firms elsewhere in Norway, and found that maritime actors located in the Oslo and Kongsberg area were willing to participate.

In advance of the interviews, we developed an interview guide consisting of a list of topics and accompanying questions that were to be addressed during the interviews. These topics were chosen on the basis from the study's research question and from the framework

developed from literature review findings. In order to secure comparable answers from the interviews, all of the interview objects were sent this interview guide prior to the interview. Two versions of the interview guide were made, one to the Norwegian Shipowners' Association and one to the rest of the maritime actors. The reason for this was that we primarily wanted background information from the Norwegian Shipowners' Association..

All of the interviews took place with both of us present and were audio-recorded. They were conducted in the firms' own premises except from the interview with Ulstein Group AS, which was conducted at a hotel in Trondheim. The interviews had a length of between one and one a half hour and were conducted in a semi-structured way. This means that the interviews were based on the interview guide, but the researchers had flexibility in terms of following up on statements made by the interviewee and making directions beyond the interview guide. By following such a semi-structured approach, comparable interviews were ensured in addition to welcoming elaboration by the interviewee on unforeseen and relevant aspects.

After the interviews, the recordings were analysed. We assigned responsibility for different parts of the interview, and transcribed our parts. Still, we both listened to full length of all the interviews to ensure that we had the same overall perception. The structure of the case study was made beforehand, and the relevant points from the interviews were filled in accordingly.

#### **4.4.2. Quantitative data**

To collect the data for the profitability graphs, Proff Forvalt through [www.forvalt.no](http://www.forvalt.no) was used. This is a professional website that delivers updated information about Norwegian registered firms' credit and market situation. Username and password is required to access their data. NTNU provided these details for us.

First, to obtain the information needed about the average profitability for maritime actors, we segmented based on Proff Forvalt's own categories for shipping companies, shipyards and maritime equipment suppliers; "Skipsrederier", "Skipsbyggerier og -verft" and "Skipsutstyr" respectively. Profitability measures concerning these Proff categories were only pre-calculated from 2005 to 2014. To obtain numbers from 2000 to 2004, a substantial cost would have incurred for Proff Forvalt to provide the calculations. Therefore, we decided that profitability data from 2005 was sufficient for this thesis' purpose. The data for each category from 2005 to 2014 was exported to Excel and then cleansed with regards to firms that had empty cells for profitability. The average was calculated based on Excel's available functionality.

Second, data for each individual case company was collected. The respective name of the company was searched for in Proff Forvalt's database. Then, the financial statement analysis prepared by Proff Forvalt was used to export numbers for the firm's profitability from year 2000 to 2014. Using Excel, these numbers were illustrated in a graph with the respective average of the Norwegian maritime actors.

Proff Forvalt's measure of profitability is based on a formula for return on assets, namely:

$$\frac{(ORS + FK) \times 100}{\frac{SGE(x-1) + SGE(x)}{2}}$$

<b>ORS</b>	Profit before taxes
<b>FK</b>	Financial expenses
<b>SGE (x-1)</b>	Total liabilities and equity this year (x-1)
<b>SGE (x)</b>	Total liabilities and equity this year (x)

According to Proff Forvalt a high level for the return on total assets is over 15 percent, while 10-15 percent is reasonable, 6-9.99% is satisfactory, 1-5.99 percent is weak and below 1 percent is not satisfactory. A general rule Proff Forvalt point to is that the profitability should be above the company's loan interests.

#### **4.4.3. Secondary sources**

*This section has been taken and in some cases adapted from Fiksdahl and Wamstad (2015) as the secondary sources used are to a large extent the same.*

The sources of information concerning the maritime industry are mainly publications by Menon Business Economics AS and the Norwegian Shipowners' Association. The reports were gathered through their respective websites and selected based on their applicability through general considerations and insights to the maritime sector. However, these reports are to some extent biased, as they are created based on a desire from private actors. Therefore, they were mostly used as a basis for specific characteristics and descriptions of the maritime industry.

#### **4.5. Evaluation of research methods**

According to Rolfe (2004), there exists no consensus on quality criteria for qualitative research. He claims that some writers argue that the same validity criteria should be used as for

quantitative studies, others have sought to identify criteria specific to qualitative research. In this thesis, we have chosen to use the four criteria of trustworthiness by Guba and Lincoln (1994; in Bryman, 2012). These criteria have equivalents in quantitative research, but are adjusted to qualitative research methods. Therefore, we consider this evaluation method appropriate. Supporting our choice, the criteria by Guba and Lincoln (1994) are well established and cited in several publications, among them Rolfe (2004) and Bryman (2012). As the quantitative research part of our study involves collection of publicly available data, we do not consider it necessary to evaluate this part of our research method in this section.

#### **4.5.1. Credibility**

Lincoln and Guba (1994; in Shenton, 2004) argue that establishing credibility is one of the most important factors in establishing trustworthiness. The establishment of the credibility of findings is twofold; it entails both ensuring that research is carried out according to the canons of good practice and submitting research findings to the participants who were studied to ensure that the researchers have understood the findings correctly (Bryman, 2012). Regarding the former, we have focused on correctly interpreting the answers from the interviews in our study. By audio recording the interviews, we were able to review the interviews in a thorough way and to discuss our understandings with each other. As for the latter, which is referred to as respondent validation (Bryman, 2012), we sent the interviewees our summarization of the main points from the interviews in order to receive feedback validating that our understanding was correct.

In this thesis, we have combined qualitative and quantitative methods compiled with theoretical perspectives. According to Bryman (2012), this is a type of triangulation which also leads to greater confidence in findings.

#### **4.5.2. Transferability**

According to Bryman (2012), as qualitative research typically entails the intensive study of a small group or individuals sharing certain characteristics, qualitative findings tend to be oriented to the contextual uniqueness and significance of the aspect of the social world being studied. Shenton (2004) supports this by claiming that the results of a qualitative study must be understood within the context of the particular characteristics of the organisations in which the fieldwork was carried out. As we have conducted interviews among maritime actors in Norway, the generalizability of our findings into other industries is limited. The reader must assess the context in which these findings are desired transferable and should be careful when drawing

general conclusion across industries. As the Norwegian maritime sector is a well-established industry following traditional patterns and with long experienced actors, we believe our findings can be relevant for industries with similar characteristics. We consider our interview guides, the basis for our interviews in this study, as quite useable for similar studies if the goal is to research business model awareness and business model innovation in other industries.

#### **4.5.3. Dependability**

Researchers should ensure that complete records are kept of all phases of the research process in an accessible manner, according to Lincoln and Guba (1994; in Bryman, 2012). As a background for understanding our results, the development of this thesis' problem statement as well as framework is described. The process of selecting the interview participants is included in this methodology section. We have chosen to not include interview transcripts, but rather to include a case study presenting the interview participants and the relevant points from the interviews. Also, by attaching the interview guides used in the interviews, insights into the interview process is given. They are written in Norwegian as this was considered most appropriate for our study, but can easily be translated to other languages. As stated in Bryman (2012), records should be kept from the research process in order for peers to act as auditors. We believe the material attached to this study is sufficient in order for auditing.

#### **4.5.4. Confirmability**

Bryman (2012) argue that complete objectivity is impossible in social research. Still, he claims that the researcher can be shown to not have overtly allowed for example personal values to sway the conduct of the research and the findings deriving from it. To ensure a degree of neutrality during the interviews, we had a deliberate attitude towards avoiding asking leading questions in order not to shape the answers by the interviewees. In addition, the flexibility by conducting semi-structured interviews allowed us to pursue information of interest by the interviewee given on their own initiative, with the criteria of it being of relevance to our study. We believe that this shows that the findings in this study are not only motivated by the researchers, but also in a significant degree by the interviewees. To furthermore secure neutrality, we presented the information received from the interviews separately from our interpretation of them, where the latter is rather presented in the discussion part.



## 4.6. Critical reflections

Qualitative research has received criticism for being too subjective (Bryman, 2012) and for not having a consensus of how the judgement of quality should be approached (Rolfe, 2004). Having chosen a qualitative research method as the main approach in this thesis, the basis for the content of this thesis is our own assessments. We have constructed the interview guides and conducted the interviews based on our view of how to answer our research question in the best possible way. Also, the assessment of our developed expectations and our scaling of these are solely based on our subjective valuation. Even though we have strived to keep the case study with the presentation of the interview findings neutral, the presentation is based on our assessment of what is significant and important. Other researchers could have conducted this research differently based on their point of view. Another relevant aspect is that the majority of the literature applied in this thesis is based on theoretical representations. As shown in table 1 in the literature review, there is a lack of empirical data in the literature applied in this thesis. This implies that the theoretical perspectives providing a foundation for this thesis, are also mainly based on subjective assessments from other authors. We have conducted an advanced search of articles and we believe that our selection of articles is representative for the existing relevant literature.

There are some uncertainties regarding this thesis' quantitative data. In the case of Wilh. Wilhelmsen ASA, the company only had available data on Proff Forvalt until 2009. In order to provide our profitability analysis until 2014, data for Wilh. Wilhelmsen Holding ASA was therefore used from 2010 to 2014. With Ulstein Group ASA, our case interview mainly regarded their shipyard division, Ulstein Verft AS. The profitability for both of these companies was included in our profitability analysis to allow a discussion of how Ulstein Group ASA's business model innovations have affected Ulstein Verft AS. In both of these examples, the evaluation of their profitability might have sources of error.

As we have interviewed only a small amount of all maritime actors in Norway, we cannot guarantee that our findings are generalizable throughout this industry. We have a narrow scope of findings. Even though one may find similarities in our interview findings from firms involved in the same maritime activities, they may not coincide with the rest of these types of firms in the industry. There could be differences in for example their products, in their value chain and they could be influenced by different stakeholders. These are all factors that could contribute to other views and perspectives than what we have found in this thesis. It is worth noting, however, that some of the maritime actors included in our case study have solid market

shares. We believe that they have given us a somewhat more representative view of the market beliefs than if our case study only consisted of small actors.

As the aim of this thesis is to research Norwegian maritime actors' relation to the business model concept and accompanying innovations, we could have been clearer when arranging the interviews that we wished to speak to employees who were directly involved with strategic processes. Some of our interviewees were closer involved in other processes in the firm, such as the financial processes, and some relevant information may have been lost due to this. It is also worth noting that we only spoke to one person in each firm. Our findings may therefore be biased from their personal point of view. The interview findings may not necessarily be what the firm as a whole would have answered.

After addressing these critical reflections, we still believe that this thesis shows significant findings in the Norwegian maritime industry. We consider this thesis as valuable for maritime actors, as well as for researchers interested in business model research.





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## 5. CASE STUDY

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This section describes a collection of case firms and the respective insights from these interviews. To evaluate how Norwegian maritime actors apply and innovate their business models, and show the variety of how business models are used, a collection of different maritime actors were selected. The case study includes interviews with five Norwegian maritime actors from three of the four categories for maritime activities earlier presented. The companies differ with regards to size, geographical location and their businesses' focus areas, but they are all traditional maritime firms with a long history of maritime activities.

The interviews have been structured similarly for all the actors to allow comparisons across maritime actors. First, the strategic history of the company is provided. Then, the firm's relation to its business model is discussed, followed by a description of the firm's use of the business model concept. An overview of the firm's perception of its current situation and the factors that influence innovation of their business model is also provided. After this, the firm's strategies for obtaining business model innovations are highlighted. Then a summary of the innovations the firm has conducted to the business model in the period of 2000-2016 is provided followed by a short description of how these innovations influenced the company. Lastly, a graph illustrating the firm's profitability from 2000 to 2014 is compared to the average for the respective maritime actor category in Norway from 2005 to 2014 and commented upon. This data was extracted from public sources and the measure for profitability used in this context was return on total assets.

The maritime actors are presented according to their type of maritime activity to allow easier comparisons. As mentioned in the methodology, we wish to highlight that as this case study is based on interviews with one representative from each maritime actor, the interviewees' have given private comments and reflections that may not necessarily be what the firm as a whole would have answered.

Table 5 provide key facts about the case companies.

**Table 5: Overview of case companies**  
*Source: Interviewees, Proff Forvalt (2016)*

<b>Maritime category</b>	<b>Case actor</b>	<b>Location</b>	<b>Established</b>	<b>Number of employees</b>	<b>EBITDA (2014)</b>
<b>Shipping company</b>	Wilh. Wilhelmsen ASA - Wilh. Wilhelmsen Holding ASA	Lysaker	1861	6200	N/A
	Fred. Olsen & Co	Oslo	1848	N/A	339 MNOK
					30 MNOK
<b>Shipyard</b>	Ulstein Group AS - Ulstein Verft AS	Ulsteinvik	1917	N/A 700	184 MNOK 13 MNOK
<b>Maritime equipment supplier</b>	Kongsberg Maritime AS	Kongsberg	1814	4600	656 MNOK
	Erling Haug AS	Trondheim	1936	50	12 MNOK

## **5.1. Shipping companies**

### **5.1.1. Wilh. Wilhelmsen ASA**

*The interviewee was Per A. Brinchmann, Vice President Technical.*

#### **Strategic history**

The Norwegian, family-owned shipping company Wilh. Wilhelmsen ASA, hereby denoted as “WW”. It is a global maritime industry group offering ocean transportation and integrated logistics services on land (Wilh. Wilhelmsen ASA, n.d.). The firm is part of Wilh. Wilhelmsen Holding ASA, abbreviated “WW Holding”. According to the interview, the company transports 5 million cars a year and has approximately 10 000 port calls during a year. Within shipping, WW is involved in ship owning, chartering, transportation and consultancy services. Regarding logistics terminal services, the prominent focus areas for WW are technical services, inland distribution and supply chain management (Our Business - Wilh. Wilhelmsen, n.d.). The industry group focuses on rolling cargo with a specialization in cars, high and heavy cargo and non-containerised cargoes (Shipping Segment - Wilh. Wilhelmsen, n.d.). WW work as a holding company that comprises about 70 directly and indirectly owned subsidiaries, joint ventures and associated companies (Our Business - Wilh. Wilhelmsen, n.d.). In particular, WW is involved in a 50/50 joint venture with Wallenius Lines, which is one of the core businesses of the Swedish shipping group Wallenius Shipping. In this thesis, Wallenius Shipping is abbreviated to “OW”. The 50/50 joint venture is named Wallenius Wilhelmsen Logistics, denoted in this thesis as “WWL”. In addition to this joint venture, both WW and OW is involved in a joint venture with American Shipping and Logistics group (ASL) and Korean based EUKOR Car Carrier. The three joint ventures WW is involved manage approximately 140 vessels in total.

#### **Relation to the firm’s business model**

According to Brinchmann, WW has a demanding business model structurally. Being involved in a 50/50 joint venture with OW as well as managing several businesses through being a holding company complicate their strategic processes. In addition, WW Holding is operating in many different parts of the value chain. Brinchmann characterizes this as a challenge as internal actors could have different goals and an actor can function as both a customer and a supplier at the same time. The operative units continuously give market feedback that provides guidelines for how to run WW’s business.

When asked of the firm's business model, Brinchmann highlights their collaboration with OW. As WWL owns terminals, operates technical service facilities, operations on land and transport at sea, Brinchmann says that WWL's business model involves providing a total logistics package to the customer in order to handle the entire transport chain. By having operations both on land and at sea, WWL has a relationship with their customers involving more than just operating a boat. Availability is a key word for WWL, according to Brinchmann. He argues that WWL and the WW Holding in total have a unique customer offering by being a part of the largest maritime network in the world, as they are represented in all coastal states and can reach any shipping destination throughout their network.

#### **Use of the business model concept in the firm**

Brinchmann claims that there are different perceptions of the business model within the firm. The operative units are very customer oriented while the holding company is focused on strategy and long term investments. Overall, he explains that their main goal by using business models is to earn money. He claims there is no clear distinction between the use of the concepts strategy and business model in WW. The owners provide an overall strategy which guides the overall firm process, while strategic processes take place in the operative units. Key performance indicators are used in these strategy processes and according to Brinchmann, it is challenging to align these across the internal units at all times.

#### **Current situation and factors influencing innovation of the business model**

The surplus of tonnage, constant pressure on margins and price conscious customers are the underlying factors influencing WW's business according to Brinchmann. Digital solutions, regulations and environmental consideration are also becoming increasingly prominent. Brinchmann states that adapting to digital trading platforms, using Big Data and understanding the future business models that follows are of high priority within WW. The company has already experienced that new entrants are trying to disrupt their current business model for car transportation as car technology evolve and possibilities for alternative distribution opens up through for example autonomous cars. According to Brinchmann, regulations, the government, the IMO and port authorities are also guiding for WW with regards to innovations because new technology must be approved before it can be put to use. This can limit adopting new technologies because inertia in regulations can make past investments misguided or even illegal. Brinchmann stresses that WW is willing to take both technical and economic risks, but the political risks are sometimes too high and create an unpredictable environment for



developing their business model. In addition, he mentions the lack of taxations in the ship industry as a hinder for innovation. Due to the even playing field conditions in the shipping industry, Brinchmann argue that it is difficult to share risks related to investments when support from the government is not possible. This is one reason why WW is involved in several research and development projects; to reduce risks related to large investments, he explains. Lastly, environmental regulations are a positive influencer for WW to adapt new technology. It is important for WW to be a frontrunner on environmental solutions and they welcome strict requirements, if they are effective, practical and fair, because WW is able to handle it with their large company and backing from OW.

### **Strategies for obtaining business model innovations**

To identify innovations, WW mostly run internal projects or hire external consultants. Earlier, the company had an innovation director and courses to educate the employees, but this has been replaced by a focus on empowering each business unit from the bottom-up and maintaining a flat structure for exchanging ideas. Regarding the culture for innovation in WW, Brinchmann explains that they have become more willing to experiment and take risks over the years because of the increasing pace in the industry. The company has worked hard to create acceptance for new ideas. Their vision of being “a shaper of the maritime industry”, in addition to the values of “learning” and “innovation”, are central concepts for convincing leaders and justifying investments in innovation projects. Creating realistic goals for innovation projects and supporting project leaders regardless of the project’s success is also essential to create acceptance for failure, Brinchmann explains. To create interest in innovations within their business areas, WW reach out to other firms and innovators. The company is for example open to testing new types of equipment on their boats to help start-ups. Yearly, they also hand out the Wallenius Wilhelmsen Logistics Orcele Award of \$100,000 for innovation initiatives through the organization Ocean Exchange in USA.

Being a large company, WW offers a large pool of financial and human resources to achieve innovations. Still, Brinchmann highlights that they might be slower than smaller competitors in creating and implementing innovations. As he explains, WW is an old shipping company with long traditions. The company does not often commit to large innovations, they rather focus on smaller, continuous improvements when developing and changing their business. The company is also highly focused on day-to-day operations. This makes implementation of ideas internally difficult, with time, resources, people and relevant competence being prioritized for operational matters. In many cases WW have created spin-

offs with external investors instead of leveraging the ideas internally. In addition, the joint venture with OW and the different companies held in WW can create conflict in agendas. The company is also increasingly involved in a larger part of the value chain in car transportation. A downside of this extensive presence in the value chain is that, as previously mentioned, suppliers might become internal clients and create diverging interests.

According to Brinchmann, WW to a large extent work proactively and try to adapt to the changing requirements and technological developments in the industry. WW also actively reaches out to the customer to obtain new ideas. This is achieved through their long-term relations and contracts. It is a clear strategy for WW to create closer ties to the customer to hinder new firms from entering. As for contact with other actors, Brinchmann mentions that WW is involved with local business partners to gain access to new countries and cultures. The joint ventures are also important for WW’s position in their segments. Cooperation has however become increasingly challenging. Brinchmann explains that laws and regulations of what collaborations are allowed have changed substantially since the 2000s. With only six to seven shipping companies dominating their market, there is a fine line between appropriate and illegal cooperation, according to Brinchmann. WW has been involved in scandals earlier related to price cooperation and is careful when approaching competitors. Brinchmann highlights that it is common to give a helping hand if it makes freight more efficient, because that also is in favour of the customer. Discussing technical solutions to new demands from the government and IMO is also important in their interaction with competitors.

**Innovation of the business model year 2000-2016**

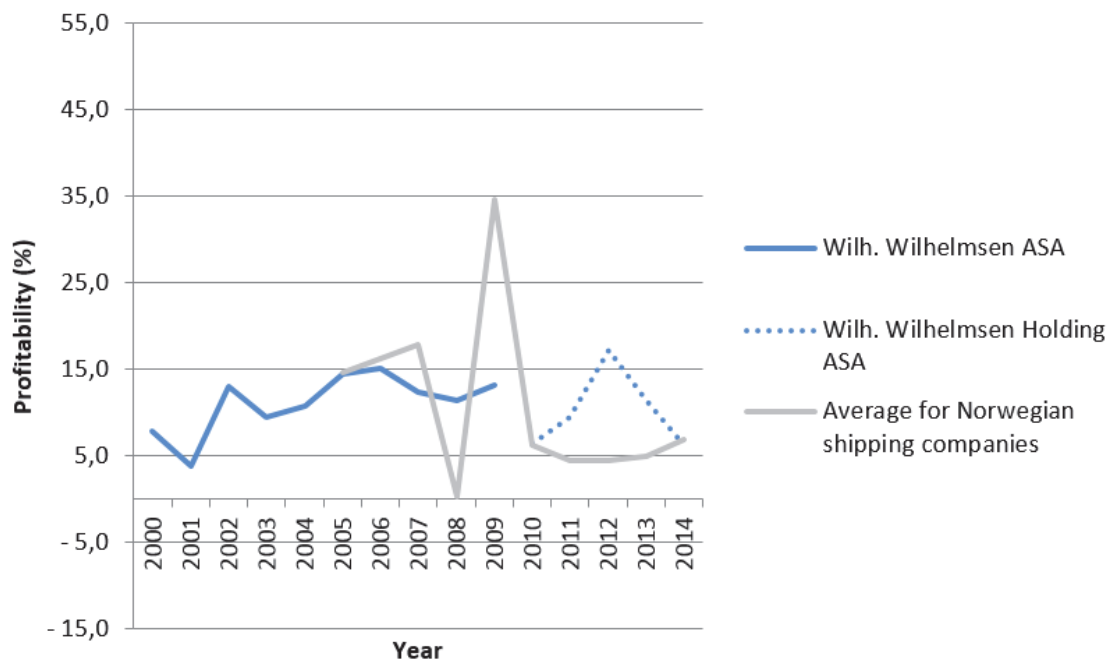
*Table 6: Innovations to WW ASA’s business model year 2000-2016*  
*Sources: Brinchmann (2016), Wilh. Wilhelmsen Holding ASA (n.d. c)*

<b>(1999)</b>	WWL is established as a joint venture between WW and WO
<b>2000</b>	Stronger environmental profile
<b>2000-2003</b>	Shifted focus to transport and logistics on land
<b>2002</b>	EUKOR established as joint venture with WW, WS, Hyundai Motor Company and Kia Motors Corporation
<b>2002-2006</b>	Shifted focus to ro-ro and stopped engagement in container transport
<b>2005</b>	Invented boat with sails as a vision for the industry
<b>2010 →</b>	Large investments in ports, terminals and logistics companies

Brinchmann highlights the joint venture with OW as the most important innovation for the company's business model. The joint venture has contributed to the later innovations; environmental focus, presence on land and financial resources for joint ventures with the Korean EUKOR Car Carrier. Brinchmann explains that the Wallenius family is genuinely interested in environmental considerations and the joint venture follows stricter rules than the regulations require. The identified business opportunity within ro-ro in 2002 has also been substantial for WW's success. Earlier, containers were limiting transport and by specializing in ro-ro WW has achieved more efficient operations and reached a more interesting market. The extension to land based transport and logistics has led to WWL becoming a leading actor in the segment according to Brinchmann. In addition, their early involvement in high and heavy gave first mover advantages and has led competitors to follow.

Brinchmann explains that innovations that have not been implemented have been hindered by three factors. First of all, the structure of the maritime industry is binding through its traditional division of business areas. It is difficult to make shifts into new parts of the value chain without harming other actors and investments in innovations might not be attractive to other actors because they are not the paying part. Second, the strict attitudes towards return on investment in the shipping industry gives lower degrees of innovations, especially in economic downturn. Lastly, the focus on maintaining business at a high level drowns new initiatives. As Brinchmann states, "in good times, we may have too much to do other than innovations, and in bad times it may be hard to finance innovations".

## Profitability 2000-2014



**Figure 17:** Profitability analysis for Wilh. Wilhelmsen ASA 2000-2009 and Wilh. Wilhelmsen Holding ASA 2010-2014

Source: Proff Forvalt (2016)

The graph above is provided for Wilh. Wilhelmsen ASA from 2000 to 2009, but since the company data was not available from Proff Forvalt, Wilh. Wilhelmsen Holding ASA provide guiding numbers for the years 2010 to 2014. In the context of profitability, the numbers will be discussed as regarding WW.

As the graph shows, WW's profitability has been clearly stable at between five and fifteen percent since 2000. As around five percent is considered satisfactory and fifteen percent is reasonable, the general profitability for WW is evaluated as good. It is worth noting that the graph for WW does not follow the fluctuations that are prominent for the average Norwegian shipping company. This might be caused by WW's strategy of implementing incremental changes and having a long-term strategy together with OW that provides predictability and stable conditions for the company.

### 5.1.2. Fred. Olsen & Co

*The interviewee was Øyvind Bjørn Kristiansen from the Financial Department. This interviewee wanted to emphasize that the interview is based on his private comment and that any information provided in connection with the interview is in its entirety supplied from public sources of information.*

### **Strategic history**

Fred. Olsen & Co, hereafter “FO”, is a Norwegian based, family-owned management company involved in a diverse range of business areas. Originally, FO based its operations within shipping, but activities have ranged from aviation, shipbuilding, oil and gas exploration, development services to renewable energy activities (Fred. Olsen & Co - History, n.d.). Today, FO provides managerial services to Bonheur ASA and its subsidiaries, referred to as the FO related companies. The FO related companies also include Fred. Olsen Energy ASA, Fred. Olsen Ocean Ltd., Fred. Olsen Renewables AS, Fred. Olsen Marine Services AS, Fred. Olsen Windcarrier AS, Fred. Olsen Cruise Lines Ltd., Fred. Olsen Travel AS (The Firm Fred. Olsen, n.d.).

### **Relation to the firm’s business model**

Kristiansen comments that there exist many different definitions of business models. When asked of the firm’s business model, he first explains the formal structure in FO. Further, he highlights that FO’s informal structure could be far more important. According to Kristiansen, the FO organization tries to avoid too many levels in the structure and categorizes the structure in the firm as quite flat.

When asked whether all the employees hold the same perception of how FO can create customer value, Kristiansen answers that there might be as many perceptions of this as there are employees. Employees might have their own thoughts and ways of contributing, and he points out that the importance of freedom for employees to solve challenges in the best manner possible. An example of customer value in their windmill installation business is the focus on quality and efficiency which will help customers to achieve efficient operations when installing the windmills.

### **Use of the business model concept in the firm**

Kristiansen does not believe that the use of the term business model is an overriding principle in the firm, but explains that utilizing resources and identifying opportunities is part of the culture. In these situations, they ask themselves “how can we make money from this?”. He further comments that this attitude can be regarded as a business model view. Since there are many FO related companies with diverse activities and they all have their own strategy, Kristiansen claims it is hard to prove whether an overall strategy explicitly exists in practice. He further argues that demand in the market always will be the basis for strategic decisions within each entity.

### **Current situation and factors influencing innovation of the business model**

According to Kristiansen, FO is experiencing that regulations and environmental considerations are the most important drivers for innovating their business model. The FO related companies have developed a diversified portfolio related to renewable energy over the last fifteen to twenty years. Kristiansen highlights that the maritime industry is capital intensive and long term commitment from the actors is necessary to be profitable over time. Kristiansen argues that with experience and the right financial structure it is possible for FO to finance these substantial investments. Financing from third parties can in some cases be necessary to be able to take on new ventures. Offshore windmill parks have for example been heavily subsidized. According to Kristiansen, it is expected to remain this way in the future because of the government's wish to develop green energy. Kristiansen also states that technological development can optimize the use of resources and that it may create business opportunities in the long run.

### **Strategies for obtaining business model innovations**

Kristiansen is of the opinion that the majority owners of the FO companies have been, and still are, essential for the development of many of the companies which is part of the Fred. Olsen related companies. Members of the Fred. Olsen family have been and still are employed in various capacities within the FO related companies and are involved on a day-to-day basis. Fred. Olsen is Chairman of the board of Bonheur ASA and has been important in identifying new opportunities, Kristiansen states. Fred. Olsen has always been on a constant search for ways to improve technical solutions and ways to operate within various business areas. Kristiansen stresses that the flat structure at the headquarters contribute to Fred. Olsen's attitude spreading throughout the organization. This may have led to a culture for innovation and development of alternative solutions, he argues. The relations between people are also essential in bringing innovation to life. Maintaining a nurturing social environment and job satisfaction seems essential for making these things happen, according to Kristiansen.

Most innovations within the FO related companies originate internally. To implement innovations employees with engineering skills have become an important part of the various businesses in FO, Kristiansen explains. However, Kristiansen state that strong technical competence has to be balanced with the financial perspective, profitability and customer demand. There are also examples of ideas and products which have taken long to develop, but did not solve the customer's problem. Still, Kristiansen stresses that failures are also a part of innovation. In these cases, it is important for FO to evaluate whether the idea can be spun off

or sold to take it one step further. Another factor is the cost focus within in the shipping industry and in the oil and gas sector. There is a constant pressure on the companies to offer efficient solutions in order to be attractive for the customer, as one always have to expect that another company is willing to come up with a better solution or a lower price, Kristiansen argues.

Kristiansen explains that helping customers is important for FO. Thinking ahead of the customer has possibly been one factor for many of the FO related companies’ success. The constant search for innovations, both in good and bad times should not be underestimated, according to Kristiansen. To have the ability to think ten to fifteen years ahead may be a good thing for further development. In many cases the companies have spent years developing new products or procedures that may be useful one day. Even though this process is costly, the company has in some cases waited patiently for success – sometimes with a positive result and sometimes not. Being aware of the necessity to adjust to volatility within the businesses is key to survival within cyclical businesses like the shipping and oil and gas industries, Kristian explains. For example, in Bonheur ASA, 70 percent of the value of the company’s activities is now related to wind power, yet in 2013 oil and gas related activities made up the same 70 percent.

From experience, Kristiansen have noticed that the shipping network to some level is useful for exchanging practical information, but new ideas are to a large extent very well protected. Even though the maritime cluster in Norway is strong, the cooperation is not always as widespread as one might think, he further argues. The FO related companies have cooperated with universities and students to develop new products, but Kristiansen states that there could possibly be more if initiative was taken by the universities and its students.

**Innovation of the business model year 2000-2016**

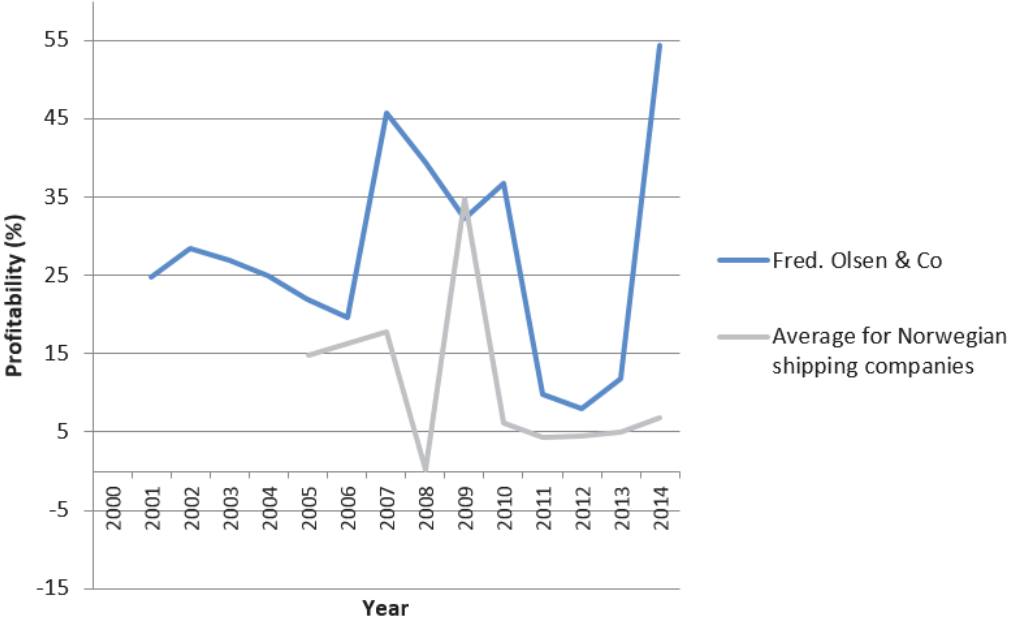
*Table 7: Innovations to FO’s business model year 2000-2016*  
*Sources: Kristiansen (2016), Fred. Olsen & Co (n.d. a)*

<b>(1993)</b>	Fred Olsen Ocean Ltd. established
<b>(1996)</b>	Fred Olsen Renewables ASA established
<b>(1998)</b>	Fred Olsen Energy ASA established
<b>2008</b>	Fred Olsen Windcarrier AS established
<b>2013</b>	Shifted focus towards installation of offshore windmill parks

The innovation of supporting installation of windmills at sea was relatively new in 2013 and Fred. Olsen Windcarrier AS took considerable risk in developing this business area. At the time,

market analyses were positive, but there were no firm commitment from customers at that stage. The market has been continuously growing since 2013 and FO's hope is that the investment will pay off in the long term.

**Profitability 2000-2014**



*Figure 18: Profitability analysis for Fred. Olsen & Co  
Source: Proff Forvalt (2016)*

As the graph shows, FO's development in profitability to a large extent follow the Norwegian shipping industry's average, at least between 2009 and 2013. The company was highly diversified before the financial crisis in 2008, and the dip in profitability for the average shipping company did not occur for FO. Based on Proff Forvalt's (2016) description of favourable range for profitability, FO's profitability is considered extremely high from 2001 to 2010, with numbers between 20 and 45 percent, and in 2014, at almost 55 percent.

Still, from 2010 to 2011 the profitability steeply fell from about 35 percent to around 10 percent. However, as 10 percent is evaluated as a strong profitability and the fall is reflected in the industry average, this does not necessarily indicate weak financial signs for FO. From 2013 to 2014 the company has also had extensive growth in profitability compared to the average profitability in their business areas. This might be caused by FO's shift in focus towards offshore windmills in 2013, which might already have proved itself valuable.



## **5.2. Shipyards**

### **5.2.1. Ulstein Verft AS**

*The interviewee was a manager at Ulstein International AS that is responsible for business development support in UG.*

#### **Strategic history**

Ulstein Group ASA, abbreviated “UG” is a family-owned holding company that provides services within shipbuilding, ship holding, design and solutions and power and control (Ulstein Group, n.d.). Shipbuilding is mainly managed through Ulstein Verft AS, denoted as “UV” in this thesis. This is a fully owned Norwegian shipyard affiliate organized under UG. Ship building in UG is also taking place at other third party owned shipyards around the world with particular engagements in Brazil and China. UV delivers a wide range of ships; from new builds to upgrades and conversions (Ulstein Verft AS, n.d.). The yard in Ulsteinvik provides services within, engineering, project management, construction, installation and commissioning (Shipbuilding - Ulstein, n.d.). More specifically, the yard builds anchor handling tug supply, platform supply, cable laying, subsea, seismic and offshore wind service vessels (Ulstein Verft AS, n.d.). UG is well known for its invention of the inverted bow, X-BOW® Hull Lines concept which ensures better performance of the vessel in rough seas and could also lower the fuel consumption.

#### **Relation to the firm’s business model**

The interviewee says it is important for UG to conduct projects where they have done thorough market assessments themselves and which are founded on robust business ideas. The interviewee highlights the contrast between the mid-2000s, where they waited for the customers to contact them and now, where they facilitate most of the projects themselves. They focus on the analytical part of the projects and strive to find better solutions than of peers. According to the interviewee, UG performs more market assessments than the average ship owner and other shipyards. In addition, they use a fast track concept for designing their vessels that differs from what competing ship designers offer. The interviewee further claims that they have a significant analytical competence and capacity compared to most maritime businesses in Norway. UG has also chosen not to expand their ship building capacity, but rather bring the larger volume of new building projects to third party shipyards abroad. By doing this, they are able to realize a set of larger and complex projects at a price that big professional investors can accept and that can better compete with competing projects abroad. The interviewee highlights that it is

important for UG not to build up too many assets, but be able to handle a set of new building projects simultaneously around the world wherever a competitive project position can be achieved.

#### **Use of the business model concept in the firm**

The interviewee says they have a deliberate use of the business model concepts in UG and its affiliated companies. Business models are a concern in the management, especially among the owners. According to the interviewee, the most important part of this is that all the key people, who influence how UG develops, have a common perception about how competition and market fluctuations can be addressed through common terminology. At all times, having relevant and competitive business models in action is paramount, the interviewee claims. In addition, the interviewee argues that the business strategy works as a backdrop for the business model in UG. There is an extensive focus in UG on using grounded management theories. To explain UG's business model, the interviewee highlights that they use strategy elements and components from researchers such as Porter, Fjeldstad and Haanæs. More so, the theories of Clayton Christensen are also well used in the strategic processes in UG, the interviewee says. According to the interviewee, deliberate use of these theories has proven to be effective for the company and its affiliations. To sustain this level of grounded theoretical support in decision making, a high degree of formal education is important when hiring new people in contrast to earlier times when more practical expertise was preferred.

#### **Current situation and factors influencing innovation of the business model**

The interviewee points out that the current situation in Møre is challenging since the regional area has been focusing on offshore markets. It is however, considered timely and healthy that this normalization and adjustment period is taking place, the interviewee argues. Still, the interviewee highlights that UG is financially strong and is probably able to handle the necessary adjustments in market, products and services. Their strong financial situation has been essential for implementing the company's successful innovations on their own, the interviewee says. The Chinese building capacity has also been a threat for Norwegian shipyards, including UG. The interviewee states that China has been able to mobilize quickly when the market was better, but with the current oil prices the competition from Asia is somewhat paradoxically less prominent. The interviewee further argues that there is a need to change the mind-set of the engineers and designers at UG. The interviewee also highlights that UG must find a new position within the offshore oil and gas industry, maybe at lower volumes compared to the recent past. In such a

process, using third party yards for building vessels and executing projects in UG is important. Technological development is also an important factor for innovations in UG. Examples of this are fuel types for ships such as hydrogen, biogas, natural gas and batteries. UG considers new regulations and greener shipping as less important for their developments and the interviewee argues that these factors are often exaggerated as influential, trend setting factors in the maritime industry.

### **Strategies for obtaining business model innovations**

For UG, the owner family's interests largely govern the company's strategy. They are focused on obtaining the highest possible return on investments, but not necessarily becoming the largest firm or retaining traditional business areas. Portfolio management and market analyses are important strategic means for achieving this. UG thus look for opportunities vertically and horizontally to diversify if revenue and profit yield can be improved. Regarding market analyses, the interviewee states that they support most decisions by analyses. In some cases, the company might be considered risk averse by other firms and representatives because of their extensive use of analyses, the interviewee explains. The interviewee believes this use of Big Data makes the firm able to make right decisions more often. The culture within the leader group is also essential for creating new opportunities. The interviewee argues that educated personalities in the leader team bring an intellectual perspective to developing UG's business concept. As mentioned, management theories, like Clayton Christensen's descriptions of radical innovations, stand strong with the leaders. According to the interviewee this provides a common terminology and a means to solve problems and challenges in UG in a better way. In combination with their curiosity and willingness to experiment, a foundation for business model innovation is present in UG. Despite this constant search for opportunities, UG is a traditional and regional based company. An example of this is the owner family who feels responsible for the local community's welfare and therefore wants the firm's activities to remain in the region.

That their technical personnel have a comprehensive interest in more advanced vessel solutions is a culture within UG that the interviewee points out as a possible hinder for achieving continual innovation. Many employees perceive it as below their dignity to develop simplistic solutions that can compete with the Asian market, the interviewee explains. The interviewee states that it is essential to change these attitudes in order to contribute to further advancements of the firm and its affiliations. Moreover, as UG is located in the Møre region, one would think tight cooperation is a part of UG's strategy. However, the interviewee argues that UG has experienced that informal communication is the most prominent form of information sharing in

the cluster. As they develop innovations internally, UG rarely formally collaborate with other actors and suppliers to achieve innovations. Making acquisitions have also been considered by UG, but it was found of less relevant during their due diligence processes. Relevant candidates to establish collaboration with vertically or horizontally might emerge in the near future. The interviewee also mentions partnering with subcontractors as central to launching innovations in the future, as they believe more innovation work will take place as open innovations.

The solutions UG has developed over recent years have to a large extent challenged traditional ship building. Their products have often changed the competitive conditions in the maritime industry and UG is therefore known as an innovative company worldwide. UG has focused on developing the original idea to ripe the benefits of a first mover advantage and entering new market segments thereof. Still, customers often find UG's solutions too advanced and expensive. Therefore, more simplistic vessel solutions have been promoted under a catalogue vessel design concept, the interviewee argues. As the interviewee highlights, this is a strategic initiative to benefit from a fast follower mode of market operations. This is also an initiative to limit risks and make novel products mature before they are launched into the market. For example, UG often develops prototypes and is careful when launching radically new solutions. According to the interviewee, this is especially important in the more risk-averse offshore oil and gas industry, which is less willing to try new solutions than the shipping industry. The interviewee mentions that making investments in partial and or full new building projects, and thus taking part in the risk of realizing such projects, has been a successful way of obtaining credibility for their innovations. The cooperation between affiliating companies in UG and the possibility of launching ideas through UG's shipping company is also important.

### Innovation of the business model year 2000-2016

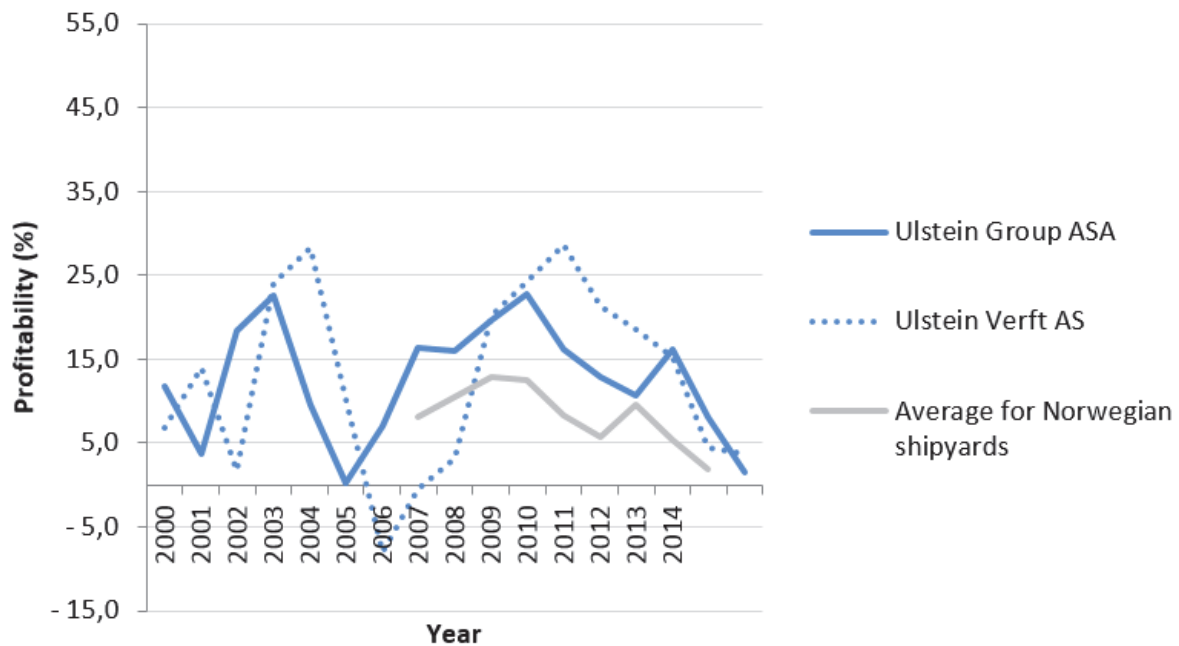
**Table 8:** Innovations to UV AS' business model year 2000-2016

Source: UV interviewee (2016)

<b>(1999)</b>	New ownership, organization and strategy of Ulstein Group ASA
<b>2005</b>	Invention of the X-Bow Hull Lines concept
<b>2007-2009</b>	Shift towards third party collaborations
<b>2010</b>	Shifted focus towards vertical diversification
<b>2011</b>	Invention of Bridge Vision and introduction of open innovation
<b>2011-2012</b>	Shifted focus towards more simplistic ship design solutions
<b>2015</b>	Invention of X-Stern Hull Lines arrangements Invention of Colibri-motion compensation system
<b>2016</b>	Shifted focus towards horizontal diversification

UG's innovation of the X-BOW® Hull Lines concept has to a large extent influenced the company's brand and was somewhat a revolution in the industry when it was introduced, the interviewee explains. The innovations from UG have as a consequence given the company first mover advantages. To ensure that innovation projects either become a success or fail fast, UG always sets a maximum project testing period of three years, after which status is reported and further progress is discussed and concluded. As earlier mentioned, using third-party yards for realizing their projects has contributed to more efficient project execution processes. It has made it possible for UG to deliver complete project packages that can compete with the Asian shipyards' building prices, and European quality assurance and project realization schedules. Through this strategic innovation process in building and retaining a competitive business model, UG has been able to maintain production volumes and reach new markets, while at the same time reduce risks associated with both standardization and tailoring new building projects, the interviewee argues.

## Profitability 2000-2014



*Figure 19: Profitability analysis for Ulstein Verft AS*  
*Source: Proff Forvalt (2016)*

UG has had years with high profitability at almost 25 percent, but has also been below and close to zero. Especially after 2005, the company achieved strong growth in profitability, which it is likely to be caused by their invention of the X-BOW® Hull Lines concept in 2005. UV's profitability is in many cases higher than the highest and lower than lowest points for UG's profitability. Compared to the average Norwegian shipyard, UV's profitability can be considered strong from 2008 to 2014. Still, since 2009 UV has experienced a decreasing profitability and was in 2014 below the industry average for Norwegian shipyards. The lower margins and movement into the catalogue type vessels might explain some of this change, but there must be other reasons for this development because of the extent of the change in profitability since 2009. Both UG's and UV's current profitability is considered weak when using Proff Forvalt's (2016) guidelines for interpreting their measure.

## 5.3. Maritime equipment supplier

### 5.3.1. Kongsberg Maritime AS

*The interviewee was an employee from the Business Development Department.*

#### Strategic history

Kongsberg Maritime AS, abbreviated in this text as "KM", is a Norwegian technology company focused on delivering solutions for the maritime industry. It is a wholly owned subsidiary of

the group Kongsberg Gruppen, which again is partially owned by the Norwegian government (Kongsberg Maritime History, n.d.). Kongsberg Gruppen includes a wide range of business areas other than maritime, including defence, protech and oil and gas systems (Kongsberg Gruppen, n.d.). KM provides solutions for on- and offshore, merchant marine, subsea, navy, coastal marine, fisheries, simulation and training, port and harbour surveillance, wind energy and more (Kongsberg Maritime Home Page, n.d.). The company is known for its technology within dynamic positioning and navigation, but also delivers systems for marine automation, safety management, cargo handling, subsea survey and construction, maritime simulation and training, and satellite positioning (Kongsberg Maritime in Brief, n.d.).

### **Relation to the firm's business model**

According to the interviewee, when addressing the business model in KM, one talks about the way the firm makes money. Their business model is described as combining different components, often from third party companies, to finished products that create value. Because of this, KM has an important interface with subcontractors. According to the interviewee, having strong relations to big and influential customers are important as they want a relationship to customers that influence the challenges of tomorrow. The interviewee says that an overall business model concerns making the relationships between these three variables work well together; subcontractors, composition of components and the relation to customers.

### **Use of the business model concept in the firm**

The interviewee believes the concept business model is a something relatively new and unfamiliar concept and that people talk about business models without quite knowing what it involves. If you work in a certain department in KM, the interviewee claims there is limited awareness of where in the business model you are operating.

The interviewee says that strategy and business model go hand in hand. The management in KM will be able to distinguish between the terms of strategy and business models on a basic principle, even though discussions will go interchangeably. Usually, business models in KM are addressed when products are discussed and the focus then becomes the earnings. There is a certain awareness of the difference between strategy and business models for those who work directly with it, like the management. Beyond the management in KM, the interviewee says that there is not a deliberate use of the word business model. The interviewee further says that KM is in a phase of understanding the content of the business model concept. For now, the interviewee believes that the use of it is mostly concerned with earnings, but the

interviewee personally thinks it involves more than that. As examples of this, the interviewee mentions the firm's processes and whether operations are done internally or externally. The interviewee believes discussions about business models are happening, but not necessarily under the name of "business models".

Whether all the employees have the same understanding of how KM creates value, the interviewee believes there are many different perceptions of this. The interviewee suggests that the employees would answer the firm's extensive dedication to their customers when asked about KM's business model.

### **Current situation and factors influencing innovation of the business model**

The interviewee highlights that the oil price and overcapacity in the maritime industry are the strongest factors influencing KM' business. The interviewee explains that the current situation provokes changes to a conservative industry that has been experiencing strong growth over the last ten to twelve years and thus has not been pressured to change until now. According to the interviewee, their customers, the shipping companies, have investments with a long time horizon, e.g. 30 years. Consequently the shipping companies have requested specialized products that are viable, independent of their cost. With the future outlook being more difficult than previous crises, the focus for shipping companies is changing towards reducing costs. The interviewee argues that it is therefore becoming more relevant for KM to produce innovations to meet these new demands. The price competition from the Asian low-end competitors is also a prominent factor for innovations to their business model, the interviewee points out. A large part of this is related to standardizing solutions for the customer and moving away from tailored, costly products. Still, KM stresses the importance of maintaining their position as a quality supplier offering better functionality than competitors. Another advantage for KM is that Norwegian shipping companies has a closer relationship with the Norwegian equipment suppliers than the Asian equals. Another factor that the interviewee points out that influence KM is regulations. Dynamic positioning is for example mandatory for certain ships, which provides a predictable demand for one of their key products. KM also find that delivering digitalized solutions are also becoming more relevant to keep up with the industry's development.

### **Strategies for obtaining business model innovations**

According to the interviewee, KM is dedicated to the customers. The customers are therefore the most important source of innovations for the company. The interviewee explains that



innovation in KM is evolutionary, making gradual improvements to existing products and focusing on broad programmes for the entire portfolio. In the industry, KM is still perceived as an innovative actor because they deliver advanced, high-end products and solve individual customer's problems. Often, products developed specifically for one customer can be deployed to other situations and thus develop into new products for KM. The focus on producing innovations exists to a larger extent at higher levels of the organization. Previously, an annual strategy process planned the next five years ahead with regards to revenue, but it has been increasingly related to how KM can create value and adapt to customer demand.

The interviewee states that the technical personnel's interest in developing more advanced ideas than the market demands can lead to friction. The interviewee further argues that the company has often struggled with launching internal ideas within KM and that there are several cases of employees going out of KM to start their own company in order to fulfil their idea. At the same time KM has realized that they must adapt the large organization to new types of demand to survive. They are for example looking into alternative methods for delivering equipment other than selling. A new part of Kongsberg Gruppen, called Kongsberg Next, has also been established to capture new business opportunities and currently consists of a company using KM's technology for wind. This is an entirely new business area for Kongsberg Gruppen and KM.

KM in some cases collaborates with larger actors in the same field, for example ABB and Siemens. The cooperation is often short-term and related to business opportunities that do not put the company's core business areas at risk. Regarding acquisitions, there are several cases of KM finding smaller companies that fit well with their portfolio where they enter with a majority interest. The interviewee however explains that these companies are not integrated into KM, even though they can carry their name. Creating joint ventures are less relevant for KM as a big actor in the industry, according to the interviewee.

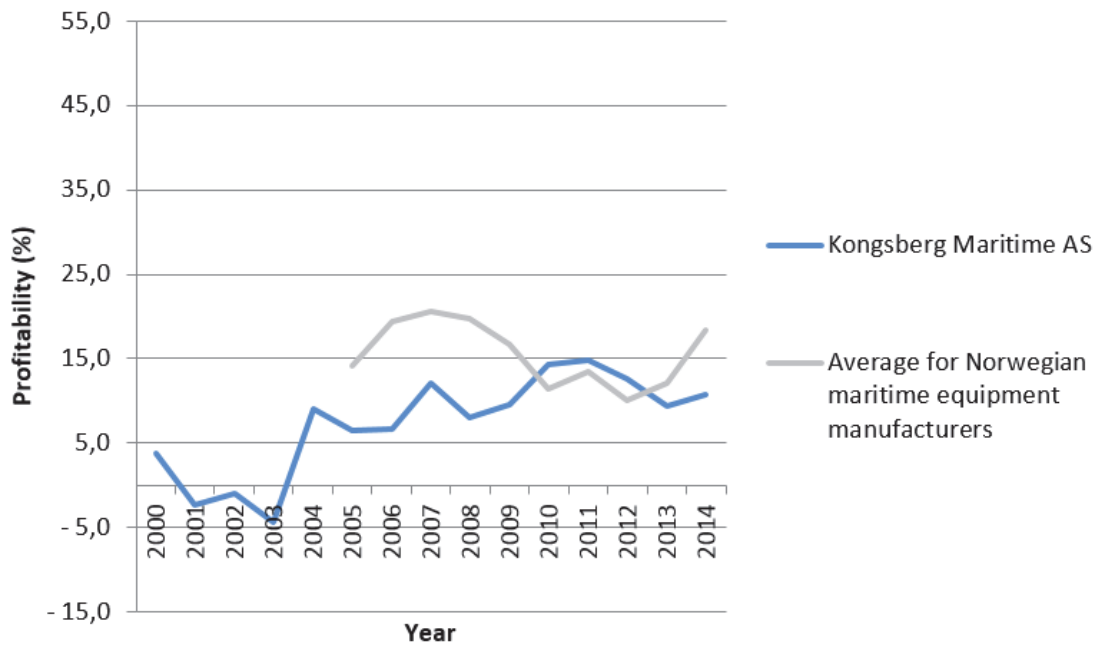
## Innovation of the business model year 2000-2016

**Table 9:** Innovations to KM AS' business model year 2000-2016  
*Sources: KM interviewee (2016), Kongsberg Maritime AS (n.d. b)*

<b>(1997)</b>	Kongsberg Maritime is formed
<b>2003</b>	Kongsberg Maritime merge from several companies (Kongsberg Simrad, Kongsberg Maritime Ship Systems and Simrad)
<b>2013-2015</b>	Shift towards selling products with lower margins and changes in the product mix Strategy process shifted towards value creation and business model focus
<b>2015</b>	Kongsberg Digital established

The merging in 2003 has contributed to large profits for KM since there was strong growth in the freight and oil and gas market, the interviewee explains. The newest innovation, Kongsberg Digital, has not yet been fully implemented, but will affect how KM approach customers, how internal processes are run and how products are made. Acquisitions and cooperation among actors might also become more relevant as a part of the repositioning KM must go through to handle the difficult market situation. Still, the interviewee stresses that KM will focus on maintaining and leveraging their key competences to discover new opportunities. Despite the need for restructuring, KM's industry segments are conservative and the traditional interaction between the maritime actors is difficult to change. At the same time, KM has experienced that ship yards have been entering the service segment for equipment and the maritime actors are fighting over available revenue streams. KM is trying to adapt to these changes by offering innovative service and after-sales solution, and looking for new opportunities in innovative business models, the interviewee states.

### Profitability 2000-2014



*Figure 20: Profitability analysis for Kongsberg Maritime AS*  
*Source: Proff Forvalt (2016)*

The profitability for KM is in a similar range as the average for maritime equipment suppliers in Norway from 2005 to 2014. It is also evident that the company has developed from negative to quite strong profitability since 2001. Their profitability has in general been in a range between five and fifteen percent, which according to Proff Forvalt (2016) can be interpreted as satisfactory to very good. As KM is focused on continuous business development and to a small extent takes risks, it is not surprising that their profitability has been relatively stable.

### 5.3.2. Erling Haug AS

*The interviewee was Kristian Steinshylla, Managing Director.*

#### Strategic history

Erling Haug AS, hereafter denoted “EH”, is a Norwegian company based in Trondheim and both produces and supplies wire rope, lifting products, mooring and marine equipment (Erling Haug AS, n.d.). In addition to wire rope, lifting products, mooring and marine equipment, EH provides services within inspections, testing, maintenance, repair, certification and technical support. Some services are also associated with maritime rescue equipment, including life rafts, survival suits, vests and fire equipment. The main markets for EH are aquaculture, offshore, maritime and onshore industry. EH is a part of the Certex division in Axload, a business area in Axel Johnson International which is owned by the Swedish company Axel Johnson. Certex

is the European leader in the production of wire rope and lifting components. It has its own distribution chain which is active in more than 12 countries and approximately 40 outlets.

#### **Relation to the firm's business model**

Steinshylla associates their business model with the work they do from the business plan provided by AxLoad. He says the business plan sets premises for this work with the accompanying components objective, goals, strategy and measures. AxLoad thus provides overall guidelines that EH must translate this into their own work. Steinshylla evaluates their concept "lifting know-how" as value added to their customers. When the customers buy a product from EH, the purchase also includes the competence surrounding the product.

#### **Use of the business model concept in the firm**

According to Steinshylla, the business model concept is not used in the firm to any significant degree. They work based on the overall strategic guidelines from AxLoad and from EH's own business plans. Steinshylla further says that it will not be convenient for him to talk about business models in the firm as the majority do not have a relation to the concept. Steinshylla believes that "lifting know-how" is well known in the firm. As EH has a focus on competence in the firm, the "lifting know-how"-motto is well communicated to customers and shared with all the employees through EH's intranet.

#### **Current situation and factors influencing innovation of the business model**

EH mainly supplies the products that the shipyards request from them, according to Steinshylla. A lot of the products are required by law to maintain a certain level of safety, which makes regulations of the products important for EH's business. The larger actors in the industry, like Statoil and Technip, are also governing for the product developments in EH. According to Steinshylla, competition has become fiercer with regards to specialized products. Until now, customer's wishes have been guiding and tailored solutions more common. Because of their customer's recent cost focus, EH has started offering more affordable, yet safe products that have the minimum functionality required. Focusing on quality and simplicity of these standardized solutions is important for EH to maintain their position relative to Asian competitors. Within EH, Certex and AxLoad there has however been resistance to adapt these standardized types of solutions, because tailoring is more profitable and there is disagreement in who should provide the less favourable standardized solutions. Steinshylla believes simplification is key for their business' further development, especially related to

documentation of the equipment they deliver. Providing additional services are also becoming increasingly important for EH, but this is a relatively new field for the company. Steinshylla highlights that EH has struggled with adapting to service because of a strong connection to their traditional business areas and competences. EH is also experiencing new types of competition through smaller entrants trying to replace EH in the value chain, for example by lending out the same equipment as EH sells.

### **Strategies for obtaining business model innovations**

As mentioned, the Axel Johnson group provides an overall strategy that EH must follow along with the other AxLoad and Certex companies. Steinshylla explains that EH has access to a great level of expertise for identifying and implementing innovations through AxLoad. EH can get assistance from the other companies if they enter a new market that someone else has succeeded with within the AxLoad network. In addition, AxLoad provides professional business area groups which EH can get support from. This consists of a collection of the most experienced employees from the member companies. Axel Johnson has also conducted a program called AxFast, where all member companies competed with innovations and gained access to each other's ideas afterwards. Steinshylla points out that this initiative has been successful.

Steinshylla stresses that EH still functions independently and that they decide how they will reach AxLoad's and Certex's goals. As mentioned, leadership and business plans are important methods to obtain innovation in the business model for EH. Also, the previously presented "lifting know-how"-motto is also central for the company's evolution. Steinshylla explains that awareness of what EH earns from each product is essential for reaching their business plan and that the company focuses on the mark-up from each product they sell. Regarding innovations to the business model EH is hesitant to implementing innovations on their own and lets the suppliers set the terms. As Steinshylla argues, this is caused by the conservative behaviour that exists in their business and the strong influence from regulations. EH as a consequence mostly implements gradual changes to their business model. Therefore, when EH has come up with new ideas that did not fit the company, the ideas have been spun off with various success.

In some cases the company collaborates with suppliers to collectively deliver a product or service to the customer. Other forms of cooperation are however less common for EH, Steinshylla highlights. The competition is fragmented within the segments the company delivers to. Joint ventures and acquisitions are nevertheless becoming more relevant to adapt to

changing market conditions and can be relevant methods for EH to position themselves better in service related activities, Steinshylla explains.

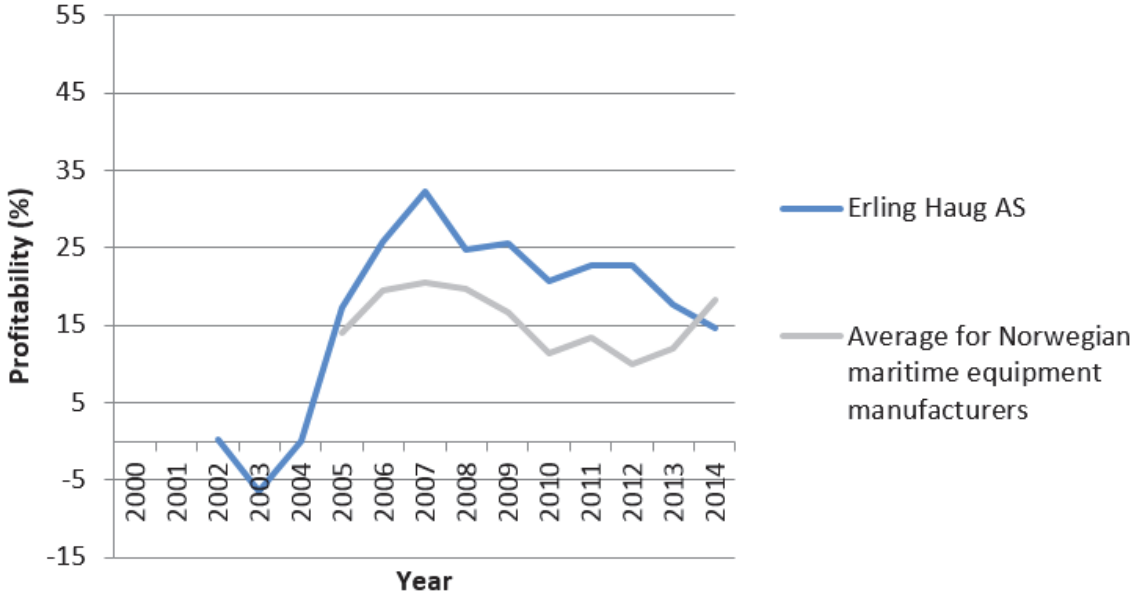
**Innovation of the business model year 2000-2016**

*Table 10: Innovations to EH AS' business model year 2000-2016*  
*Sources: Steinshylla (2016); Erling Haug AS (n.d.)*

<b>2006</b>	Erling Haug AS is sold to Axel Johnson
<b>2007</b>	Acquisition of company in Hammerfest
<b>2014</b>	Shift towards service related activities
<b>2014-2016</b>	Larger cuts in the offshore segments
<b>2016</b>	Service strategy expanded Takeover of a similar company from AxLoad

Before EH was acquired by Axel Johnson, the company was a traditional, family-owned company. Steinshylla explains that this change in ownership expanded EH’s possibilities of growth and strengthened their position financially. In addition, the acquisition of a local company in Hammerfest in 2007 had several synergies with EH and was important for the company to gain access to the construction of the Goliat field, which is in close proximity to Hammerfest. The acquisition has contributed to a wider presence in Norway for EH and increased their business opportunities in the country. Currently, EH is expanding its commitment to service related activities both geographically and technically. Since EH has limited capacity, this initiative is happening at the expense of other activities, but Steinshylla believes closer ties with their customers will be a strong position for the future. He believes this is a business model innovation that competitors have not started implementing to the same degree as EH. The limited capacity has earlier been a hinder for innovations in EH and the firm is usually strict if they have to make cuts to their existing portfolio to allow new ideas to enter. The expansion to service is therefore a quite new situation for the company. A lack of resources can also be a challenge for implementing innovations, according to Steinshylla.

**Profitability 2000-2014**



*Figure 21: Profitability analysis for Erling Haug AS  
Source: Proff Forvalt (2016)*

When looking at EH's profitability they have been more profitable than the average Norwegian maritime equipment supplier, at least until 2013. The company's profitability grew strongly from 2003 to 2007. Still, the profitability has been continuously decreasing since 2007 and especially since 2012. In fact, the profitability for EH has halved, from over 30 percent in 2007 to around 15 percent in 2014. Even though 15 percent is considered good, EH is currently below the average for Norwegian maritime equipment suppliers. It is difficult to explain the development for EH's profitability based on specific events in the company, but the competition in products from Asia may be a factor that has contributed to a weaker profitability for EH.





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## 6. DISCUSSION

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In this section, the discussion is presented. First, we will address the expectations from our framework in relation to our research question. This will be done through compiling the findings from the literature review with our interview findings presented in the case study. During the discussion, each expectation will also be scaled to which degree they are consistent with case study findings. The range will be from a low level to a high level of consistency with case study findings. The overall evaluation of consistency will be marked with a cross. The companies that did not fit any of the characteristics from the theories were considered neutral in relation to our expectation. Our case companies in this section will be referred to as Wilh. Wilhelmsen, Ulstein, Kongsberg Maritime, Fred. Olsen and Erling Haug instead of the previously used abbreviations WW, UG, KM, FO and EH.

### 6.1. Business models

#### 6.1.1. Congruence between business model components in literature and in practice

**Value proposition.** As our literature review showed, *value proposition* is a widely mentioned component and considered as essential in a business model. The case study reveals that Wilh. Wilhelmsen, Ulstein and Kongsberg Maritime have a clear view of their *value proposition*. Wilh. Wilhelmsen enhances their availability for their customers and is able to reach any shipping destination throughout their extensive network. Ulstein specifies that their *value proposition* is delivering highly advanced vessels designs and offering cheaper solutions through third-party yards. Their analytical competence also contributes with value. Lastly, the case study shows that Kongsberg Maritime's *value proposition* is creating value by combining different components to a finished product rather than building their own components. In all of these expressions, we see that there is a continuous customer-focused value creation. This is consistent with what Zott et al. (2011) identified in their review of business model literature; there is consensus that the business model should revolve around this type of value creation. In contrast to the mentioned value propositions, Erling Haug and Fred. Olsen do not express clear customer offerings. This may be associated with their lack of significant relation to their business model, as the case study revealed. Still, it can be regarded as somewhat surprising when taking literature into account. As earlier presented, Morris et al. (2005) argue that there

is no business without a defined *value proposition*. During our case interview with Erling Haug, they mentioned their “lifting know how”-concept. As they consider this concept as value added to their customers, we believe that this could be indirectly understood as their *value proposition*. In Fred. Olsen, there is no common view of the customer offering from the case study, but there is rather a focus on the employees’ freedom to solve challenges.

**Profit/revenue generation.** Regarding the *profit/revenue generation* component, the case study reveals different strategies among the actors. The case study reveals that Ulstein, Fred. Olsen and Erling Haug explained aspects directly associated to this component, whereas the rest of the actors were somewhat vague. By using third party yards to realize their projects, Ulstein is able to compete with competing projects abroad price wise. The shift towards more cost saving ships has resulted in lower risk while still maintaining production volumes. Also, portfolio management and market analyses are important in Ulstein to maintain a reasonable return on investments. To prevent innovation projects from failing, and thus avoid losing revenue, they always keep an exit opportunity open within three years. In Fred. Olsen’s case, they have a long term focus on how they profit from their investments, as the area of renewable energy is an expensive area to be involved in. In Erling Haug, they use the mark-up from each product as an indication of earnings in order to fulfil their business plan. In Wilh. Wilhelmsen and Kongsberg Maritime, there were no directly significant aspects of this component revealed in the case study. In Kongsberg Maritime, it is worth noticing however that they are looking into alternative methods for delivering equipment other than selling in order to adapt to new demands.

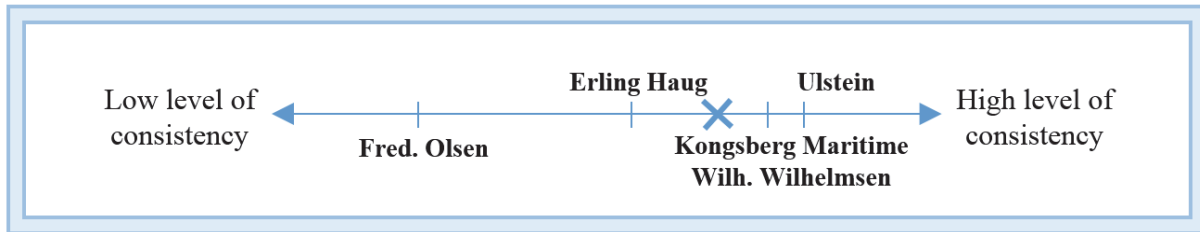
**Value chain architecture.** The third component expected to be present in the actors’ business models is the *value chain architecture*. Here, we see a similar expression of findings as we found with the value proposition component; Wilh. Wilhelmsen, Ulstein and Kongsberg Maritime have the most deliberate relation to their *value architecture*. This is not surprising as this component is an expression of how to deliver the value proposition, as described in the literature review. The *value architecture* component consists of both the internal value chain and of a value network. The former includes both key processes, as well as key resources. In order to offer the customer a unique availability, Wilh. Wilhelmsen handles the entire transport chain. Regarding the value network, the case study shows that several actors mention relevant aspects. Wilh. Wilhelmsen is involved in joint ventures primarily in order to reduce risks on investments. They are also involved with local business partners in order to gain access to new countries and cultures. The case study also shows that Kongsberg Maritime’s relations to their customers, as well as subcontractors, are considered important to create value. Ulstein uses a

*value chain architecture* where they combine competences from their shipping company, shipyard and design department, in addition to the third-party shipyards they access. Lastly, Erling Haug collaborates with suppliers when delivering products or services to deliver their implicit value proposition. They have also highlighted that stronger ties with their customers as important for their future.

**Competitive strategy.** Regarding the *competitive strategy component*, none of interviewees highlighted competitive advantages as a part of their business model in any significant degree. Still, Wilh. Wilhelmsen and Ulstein offer value propositions and resources that can be considered a competitive advantage in the maritime industry. As Wilh. Wilhelmsen is a part of what they claim to be the largest maritime network in the world and Ulstein holds a significant analytical competence compared to most maritime businesses in Norway, it is hard for competitors to match their offerings.

**Target customer.** For the last component, *target customer*, Kongsberg Maritime was the only actor that mentioned relevant aspects. They have a deliberate attitude towards targeting the influential customers in the market. This is enhanced as an important part of their business model.

As Teece (2010) argues, a business enterprise either explicitly or implicitly employs a particular business model. From the case study, we see that this relation varies among the maritime actors. Overall, Wilh. Wilhelmsen and Ulstein, revealed a more deliberate relation to their business models than the remaining actors did. This leads to varying answers to our expectation of congruence between business model components in literature and in practice. Overall, *value proposition*, *profit/revenue generation* and *value chain architecture* were the recurring components among the actors. This is consistent with what the literature review revealed. Another finding which is consistent with literature is that the actors specifying relevant *value proposition* information also had a relation to the *value chain architecture* component. As mentioned, these components are related to each other as the latter is an expression of how to deliver the former. Overall, for the majority of the maritime actors, there is congruence between the *value proposition*, the *profit/revenue generation* and the *value chain architecture* components in literature and in practice.

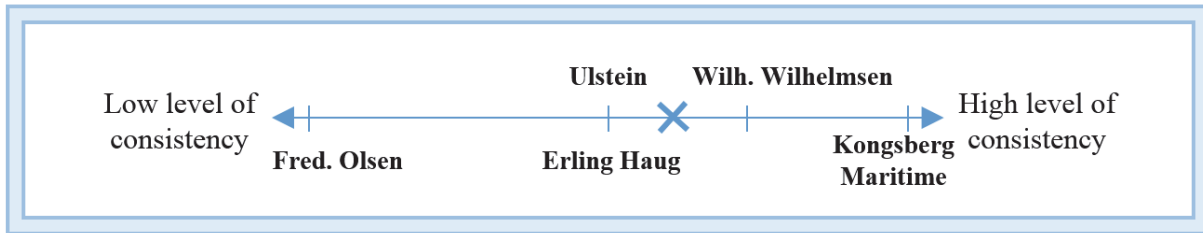


**Figure 22:** Level of consistency to expectation 1a; There is congruence between the structure of the business model components in the literature and in practice for maritime actors.

### 6.1.2. Approach to business model definition

As Wilh. Wilhelmsen specified that they use their business model with the aim of earning money and Fred. Olsen compares a business model view to the question; “how can we make money on this?”, the case study’s shipping companies are naturally classified at the *economic* level. However, keeping in mind the description of the business model definition levels by Morris et al. (2005), Wilh. Wilhelmsen’s presentation of their model can be interpreted as involving aspects from the *operational* level as well. As presented in the literature review, this level represents a model with an architectural configuration including decision variables such as logistical streams. As Wilh. Wilhelmsen’s business model is presented as being able to handle the entire transport chain, their view can also be somewhat regarded at an *operational* level. As for the rest of the actors interviewed, only Kongsberg Maritime answered with specified information to this manner. Their discussions about their business model are mostly concerned with earnings. Therefore, they are categorized as having an *economic* approach.

We expected that the shipping companies to have a more comprehensive approach to their business model than the rest of the maritime actors. We found that this is partially true. As the above text shows, Wilh. Wilhelmsen do in fact relate to a more comprehensive view than the rest of the actors as their business model view shows similarities the *operational* level. Still, Fred. Olsen was classified as having an *economic* approach. Of the remaining actors, Kongsberg Maritime function as the only representative. We find that they relate to the *economic* level, as expected. In the framework, we also proposed that there was reason to believe that the shipping companies were to show indications of a *strategic* business model view, but this is shown to not be true.

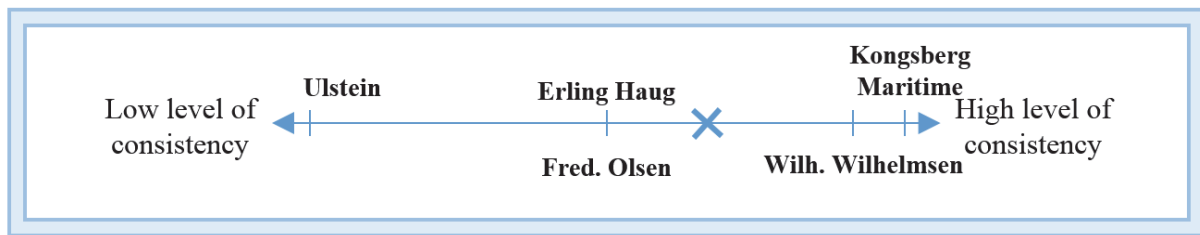


**Figure 23:** Level of consistency to expectation 1b; The shipping companies view their business model in a more comprehensive manner than the remaining maritime actors.

### 6.1.3. The use of business models

In Wilh. Wilhelmsen, there are different perceptions of the *business model* within the firm and they specify that there is no clear distinction of the *strategy* and *business model* concepts. There is a similar situation in Kongsberg Maritime, where they perceive the *business model* concept as unclear and with an ambiguous content. This perception is consistent with the existing literature reviewed in this thesis, where a common topic concerns the lack of boundaries, as well as an exact definition, of the *business model* concept. However, Kongsberg Maritime specify that the management are able to distinguish between the *strategy* and *business model* concepts, but that these concepts go hand in hand in practice. Furthermore, the case study shows that Ulstein stands out among the actors by deliberately distinguishing between the concepts through a common terminology. By doing this, they claim that they are better equipped to meet market competition and market fluctuations. Ulstein claims that their business strategy work as a backdrop compared to the business model, and from this shows similarities to the findings in our literature review.

The case study revealed that the business model concept was not used to any significant degree neither in Fred. Olsen nor Erling Haug. The basis for exploring this expectation must therefore be based on the remaining actors. We expected that there is an overlap between the use of the concepts *business model* and *strategy*. From the above text, this seems to be true regarding Wilh. Wilhelmsen and Kongsberg Maritime. The situation in Ulstein, however, contradicts our expectation as they deliberately distinguish between the *strategy* and *business model* concepts. The case study shows that they in general have a focus on using established strategic terms and theories. Our expectation could only be explored based on the three actors using the *business model* term. As we found that two out of three actors use the *strategy* and *business model* terms interchangeably, we have the following findings;



**Figure 24:** Level of consistency to expectation 1c; There is an overlap between the use of the concepts strategy and business model for maritime actors.

#### 6.1.4. How Norwegian maritime actors apply their business models

From the analysis and discussion of how the different maritime actors apply their business model, we see that there are differences among the actors. The actors' relation to their business model can be identified as threefold; Erling Haug and Fred. Olsen did not have a significant relation whereas Wilh. Wilhelmsen and Ulstein had a deliberate relation. In KM, we find an intermediate situation where relevant business model discussions are happening, though not under the collective term "business model". That two of the actors included in the case study revealed such a weak relation to their business model was unforeseen as Teece (2010) argue that all enterprises employ a particular business model. This implies that there is in fact a business model present in Erling Haug and Fred. Olsen's cases, but it might be understood as being more implicitly rooted than in Wilh. Wilhelmsen and Ulstein where the business model is perceived as explicit. We identify that the majority of the actors, regardless of their business model relation, perceives the content of the business model concept as quite unclear. In Kongsberg Maritime, they experience the concept as something new and that people talk about the concept without quite knowing what it involves. These findings support what is shown in our literature review; there is no exact understanding of the business model concept. Among the three actors having a business model relation, Kongsberg Maritime, Ulstein and Wilh. Wilhelmsen, we identify similarities in the understanding of the concept's content as they all had a high level of congruence with the *value proposition*, *profit/revenue generation* and *value chain architecture* components presented in literature. Still, Ulstein was the only actor using the business model concept as a separate term in their strategic operations. Both in Ulstein and Kongsberg Maritime, the *strategy* and *business model* concepts are used interchangeably.

Overall, the maritime actors apply their business model differently. We find no similarities in how the business model is applied between the actors in the same maritime

categories. Among all the actors, we surprisingly identify extremes; Erling Haug and Fred. Olsen with no significant relation to their business model on one side and Ulstein with a deliberate relation and active use of their business model on the other. KM is considered to be an intermediate actor in this manner.

## **6.2. Business model innovation**

### **6.2.1. Level of external involvement to achieve business model innovations**

**Favourable strategies: Type 6, 5 and 4.** Based on the case study, Wilh. Wilhelmsen was identified as *adaptable, type 6*, due to their strong involvement in several joint ventures. Still, it is evident that Wilh. Wilhelmsen claim they do not experiment to a large extent in their business model innovations. Brinchmann clearly stated that Wilh. Wilhelmsen was mostly concerned with incremental innovations and that they would not make sudden changes to their business. We, on the contrary, consider the innovations Wilh. Wilhelmsen has conducted experimental. They have made bold moves with regards to acquisitions and several joint ventures, extended their focus to ro-ro and land based transport before it was common in the industry and takes environmental initiative beyond regulatory requirements. In relation to *type 5*, which was expected to be prevalent among the favourable strategies, we find that Wilh. Wilhelmsen not only conducts formal sharing of information with partners, but also use it as a source of innovation. Thus, *type 5* characteristics does not fit Wilh. Wilhelmsen. Thus, *type 6* is the most suitable characterization of Wilh. Wilhelmsen's business model innovator strategy. The case study also showed that Erling Haug was a firm with relatively high external involvement compared to the other case firms. Since the relations for this actor to a large extent are informal, we find that Erling Haug can be evaluated as *type 4, externally aware*, rather than *type 5* or *6*. For example, they are involved with their suppliers to both cooperate with delivering solutions to the customer, as well as obtain information about relevant innovations.

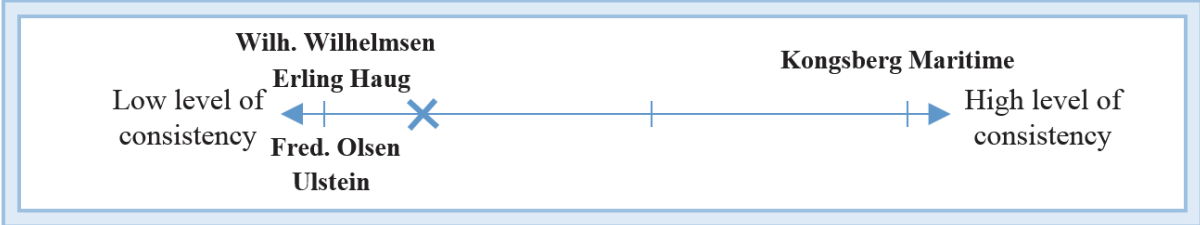
**Non-favourable strategies: Type 3, 2 and 1.** Regarding the other firms, both Fred. Olsen and Ulstein is considered *segmented, type 3*, as they to a high degree focus on developing innovations internally. This type's business scope was seen as highly vulnerable to disruptive innovation by Chesbrough (2007). As Fred. Olsen stated that they were concerned about the solutions they developed being replaced by other firms offering similar, yet better products, we find that this type fits well with Fred. Olsen. Ulstein is not exposed to this risk to the same extent as they have tended to be the disruptor in their business areas. There is however some

uncertainty towards categorizing Ulstein as *type 3* since Ulstein is involved in the Møre cluster, which is known for its strong collaborations. Ulstein did not use the cluster network as a source of innovations and thus do not fit a higher level of external involvement, according to Chesbrough's (2007) descriptions. We also found that Kongsberg Maritime has a low level of external involvement. Kongsberg Maritime is considered even more internally oriented than Fred. Olsen and Ulstein since the case study showed that they mainly conduct short-term collaborations and often use acquisitions as a means of achieving innovations. Kongsberg Maritime is considered to have *low/medium degree of differentiation* since they are highly focused on delivering high quality solutions with advanced functionality. They are thus oriented towards the performance segment in the maritime industry and we find Kongsberg Maritime to be a *type 2* firm. This type, according to Chesbrough (2007), lacks resources for maintaining the differentiation that their innovations have given. In Kongsberg Maritime's case, the financial resources are not considered the main challenge, as Kongsberg Maritime is a large company that is financially strong. The challenge for Kongsberg Maritime is on the other hand that the firm does not prioritize development of innovations internally and thus does not put the necessary resources aside for innovation projects. Because of their resource allocation prioritizations, we find that Kongsberg Maritime indirectly fits Chesbrough's (2007) descriptions of *type 2* with regards to resources. Regarding *type 1, undifferentiated*, we find that Wilh. Wilhelmsen is highly focused on price and availability. In that sense, the firm also fits well with Chesbrough's (2007) descriptions of *type 1*. Still, when considering their strong relation to their business model and how they use it in their strategic work we find that *type 6* is a more correct characterization of Wilh Wilhelmsen.

From these findings, it is clear that the expectations we had to Chesbrough's (2007) types were not reflected in the case firms. First of all, fewer firms than expected were found to have a high level of external involvement, with only Erling Haug and Wilh. Wilhelmsen being evaluated at the higher end of the external involvement scale. In addition, no firms were considered as a *type 5, integrated*, which was expected to be the most relevant of the high external involvement types. More specifically, we found that Erling Haug was *type 4* and Wilh. Wilhelmsen fit *type 6*, which were both lower and higher findings for external involvement than foreseen. Thus, the prediction of *type 5* being the most relevant type did not fit. It was also surprising how many firms had a low level of external involvement, considering three out of the five case firms were regarded as relatively low on Chesbrough's (2007) scale. With the reputation of maritime firms widely cooperating and utilizing the cluster network for achieving innovations, we did not expect this extent of low involvement. We still expected that some



firms might be regarded as *type 2* because of their focus on the performance segment, but this was only the case for Kongsberg Maritime. For Ulstein and Fred. Olsen we found they were *type 3*, which was not a part of our expectation. Thus, the expectation only fit one firm. This gives us the following result for expectation 2a;



**Figure 25:** Level of consistency to expectation 2a; The maritime actors are considered either *type 5*, *integrated*, or *type 2*, with low/medium degree of differentiation.

**6.2.2. Types of innovation capabilities leveraged to achieve business model innovations**

**Aligned.** Regarding the *aligned* innovation capability, the case study shows that all firms in the case study are focused on pleasing the customer when conducting business model innovations. Referring to customer value is important to be considered *aligned*, according to Giesen et al. (2009). We find that Wilh. Wilhelmsen and indirectly Erling Haug have the most prominent mind-set of the case actors. The focus on leveraging internal capabilities and relating capabilities to the value aspect is present in both firms. In Wilh. Wilhelmsen’s case, they work hard to create customer value and that the competence within the firm is used to obtain business model innovations. In addition, Wilh. Wilhelmsen is highly involved in collaborations and partnerships through their joint ventures. This fits well since a part of the *aligned* capability is to establish open collaborations and partnerships externally. Wilh. Wilhelmsen is therefore, as we see it, a perfect fit for the *aligned* capability. Erling Haug is strict when making prioritizations to their product portfolio, if business model innovations become relevant. We find that they do this to maintain consistency in the firm and preserve their capabilities for delivering great customer value. Moreover, as the firm is guided by the “lifting know-how”-motto in their day-to-day operations, the value aspect of the “aligned” innovation capability Giesen et al. (2009) describe is highly applicable to Erling Haug. Erling Haug is however not considered *aligned* to the same extent as Wilh. Wilhelmsen when looking at collaborations and partnerships. This suits the categorization of Wilh. Wilhelmsen as *type 6* and Erling Haug as *type 4*, as earlier presented.

**Analytical.** The *analytical* capability was only present within one actor. We found that Ulstein clearly implemented analyses as a strategy for assuring the success of their planned business model innovations. As claimed in the interview, Ulstein has strong analytical competence, also compared to industry counterparts. Forecasting and prioritizations are central for how Ulstein decide which business model innovations to implement. As a consequence, we find that Giesen et al.'s (2009) innovation capability *analytical* suits Ulstein well. An aspect of this capability that is not directly applicable to Ulstein is however the integration of external information across partners. As we have seen, Ulstein mainly conduct business model innovations internally and is not involved in any partnerships. They are still a part of the cluster in Møre and thus, one can assume that some mild forms of partnerships indirectly exists and provides information for Ulstein.

**Adaptable.** Lastly, we found that two firms were *adaptable*, from Giesen et al.'s (2009) descriptions of the characteristic. Both Ulstein and Fred. Olsen are highly risk-taking without compromising their financial performance. The characteristics of a strong culture for innovation are also present in Ulstein and Fred. Olsen. Especially Fred. Olsen explained that they have a flat structure and that employees have many opportunities to bring ideas into the company. Strong leaders are also present with these actors. The management are argued to be important sources of the business model innovations for both firms. These attitudes have made both companies a frontrunner in their innovations. This is what Giesen et al. (2009) describe as an important characteristic for the *adaptable* type. Therefore, we believe that *adaptable* is a suitable categorization for Ulstein's and Fred. Olsen's innovation capability type.

The findings show that two firms, Wilh. Wilhelmsen and Erling Haug, are considered *aligned*. This is a low number of *aligned* actors compared to the expectation, where we argued that this capability would be prominent among the maritime firms. In the context of our case study, prominent would be measured as more than half of the case companies being evaluated as *aligned*. With regards to the innovation capability of being *analytical*, we expected that many of the case firms were primarily guided by traditional business pattern and key individuals instead of market analyses. The findings were according to these claims, with only Ulstein evaluated as a company with a clear *analytical* approach. Concerning the last *A* of Giesen et al.'s (2009) *three A's*, we did not expect to find firms with the *adaptable* innovation capability, since risk-taking and experimentation was evaluated as unlikely behaviour among the maritime actors. Surprisingly, the case study findings show Ulstein and Fred. Olsen, i.e. two out of five firms, were identified as *adaptable*. The consistency between the expectation and the case study findings regarding this capability are therefore considered neutral.



**Figure 26:** Level of consistency to expectation 2b; Of the three A's, the aligned capability, is the most prominent among maritime actors.

### 6.2.3. Business model innovator strategy applied to achieve business model innovations

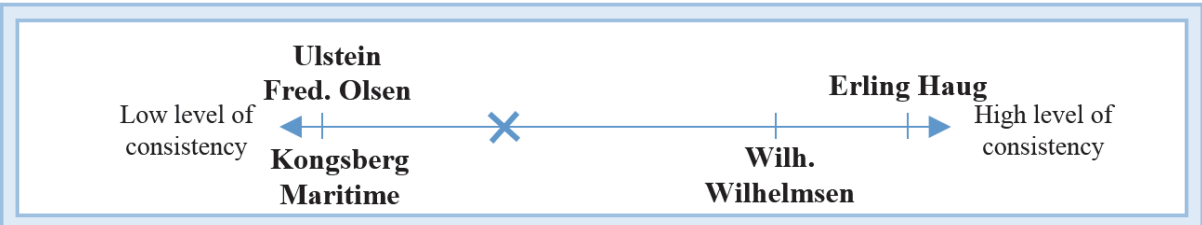
**Open strategies: Open/Reactive and Open/Proactive.** As we have highlighted earlier, Erling Haug maintains relations with both suppliers and customers. They are therefore considered an *open* firm. Erling Haug however rarely implements innovations themselves and as explained, prefer that product innovations are ensured by their suppliers. In addition, they mainly implement incremental business model changes. This is anticipated, since the firm delivers solutions related to safety, which are highly dependent on regulations. Their customers are conservative and demand only the minimum required safety from their products at a reasonable price. Erling Haug therefore avoids making changes until the market, or regulations, demands it. In relation to Taran et al.'s (2015) insights on business model innovator strategies, they can thus be seen as *reactive*. Due to their focus on continuous business model innovations that leverage their capabilities and help reach new segments, *open/reactive version 1*, with low complexity, low radicality and high reach, is the most applicable for Erling Haug. At the same time, Erling Haug has shifted towards providing service to existing and new customers through their recent acquisition. This is a radically different approach for Erling Haug and a complex business model innovation with low reach, when related to Taran et al.'s (2015) theories. We therefore consider this a *open/reactive, version 2*, business model innovator strategy. As a consequence, Erling Haug has implemented both *version 1* and *2* of this innovator strategy type. This demonstrates that it is possible to implement the two versions of *open/reactive* in parallel. The *open/proactive* innovator strategy that Taran et al. (2015) describe is considered to fit Wilh. Wilhelmsen well. First of all, Wilh. Wilhelmsen actively uses joint ventures and acquisitions to achieve business model innovations. We therefore consider them an *open* firm in terms of collaborations. Second, Wilh. Wilhelmsen actively seeks innovations before the market changes and thus use a *proactive* approach to satisfy customers' demands. The changes that Wilh. Wilhelmsen has implemented have also, as explained earlier, been highly experimental

and to some extent radical for the firm. Examples of this are the extension to providing land based transport and moving from transporting a combination of containers and ro-ro to plain ro-ro transportation. Still, Wilh. Wilhelmsen is traditional, as the case study describes, and has maintained within the shipping industry since the firm's establishment. Thus, the complexity of each business model innovation is considered relatively low, even though the sum of the changes for Wilh. Wilhelmsen since 1999-2000 has been extensive. The reach of the business model innovations Wilh. Wilhelmsen has implemented have in many cases been high, due to the network the firm has created through Wallenius Wilhelmsen Logistics and their Korean counterparts.

**Closed strategies: Closed/Proactive and Closed/Reactive.** Fred. Olsen and Ulstein are regarded as *closed/proactive*. Both Fred. Olsen and Ulstein conduct innovations internally and do not share these advancements with their fellow maritime actors until the idea is launched. This fits well with Taran et al.'s (2015) descriptions of a *closed* approach. As Fred. Olsen and Ulstein were earlier considered to be using a *segmented* business model innovator strategy, it is interesting to observe that they are sharing the same characteristics once again. These two firms can also be considered to be ahead of the market and their customers with their innovations. When compared to the theories Taran et al. (2015) present, this leads us to the finding that both firms act *proactive* in their innovator strategy. For Fred. Olsen, this *proactive* approach has proven itself difficult, as they are vulnerable to disruption. Ulstein on the other hand has been a first-mover with their innovations and as earlier discussed, rather than being disrupted, have disrupted their industry standards. Both firms have to a large extent conducted radical business model innovations with high complexity, and both have been successful in following this strategy. These firms are therefore argued to be *closed/proactive*. The less favourable strategy of business model innovation, *closed/reactive*, was argued to not be as relevant as the *open* strategies in our expectations. Still, our case study indicates that Kongsberg Maritime follows this strategy. It further shows that Kongsberg Maritime is internally oriented in their innovation processes. The innovations are often triggered by customers' demand or by pressure from Asian competitors. Thus, the *closed* and *reactive* characteristics Taran et al. (2015) describe fit well for Kongsberg Maritime. Also, Kongsberg Maritime stated that they mainly conduct incremental changes that have low radicality and low reach, but that affect their entire firm. Thus, the complexity of changes in Kongsberg Maritime is often high. In summary, Kongsberg Maritime is a nearly perfect example of Taran et al.'s (2015) *closed/reactive* type. At the same time, it is worth mentioning that Kongsberg Maritime is considered an innovative company because of their advanced solutions and they are successful when looking at

profitability measures. It is therefore uncertain whether the *closed/reactive* is as unfavourable as described by Taran et al (2015).

From the review of the maritime industry and existing literature it was expected that many of the maritime firms would be characterized as *open*, and especially as *open/reactive, version 1*. The case study however shows that this characteristic only fit Erling Haug. Thus, the *open/reactive* type is not as prevalent as expected. Erling Haug was also found to fit both *version 1* and *2* of this characteristic, and thus our expectation did not fit perfectly. The *open/proactive* innovator strategy was also expected to be present with the maritime firms. This expectation proved itself to be right, as Wilh. Wilhelmsen was considered *open/proactive*. The expectation was still that *open/reactive* would be more common than *open/proactive*, which is not the case for this case study. In our initial assumptions, the *closed* approaches to business model innovations were not evaluated as likely compared to the *open* strategies. Still, the case study findings indicate that three firms are in fact *closed*. As discussed, Kongsberg Maritime was identified as *closed/reactive*. This strategy type was to a small extent considered relevant for the maritime actors, but not as relevant as the *open* strategies. The last category, *closed/proactive*, was expected to not occur among the maritime firms. Still, both Ulstein and Fred. Olsen were found to apply this business model innovator strategy. The results regarding which business model innovator strategies maritime actors apply to achieve business model innovations is therefore partially inconsistent with our expectation.



**Figure 27:** Level of consistency to expectation 2c; For maritime actors, the *open* strategies are the most relevant, with the *open/reactive, version 1*, considered as more likely compared to the *open/proactive* strategy.

**6.2.4. How maritime actors innovate their business models**

Overall, the analysis and discussion of how the different maritime actors innovate their business model revealed unexpected results. First of all, few of the maritime actors that were studied were categorized as *open* or with high external involvement. This is a large contrast to the review of the maritime industry, where a culture for information sharing is emphasized. Second, the discussion reveals that Ulstein and Fred. Olsen share many of the same characteristics, while

Wilh. Wilhelmsen and Erling Haug to some extent follow several similar strategies. Fred. Olsen and Ulstein were given similar types, *segmented* and *closed/proactive*, while both Wilh. Wilhelmsen and Erling Haug were categorized as high on external involvement and as *open* and *aligned* innovators. The first two of these firms can be considered highly radical in their innovations, but low on external involvement, while the last two are on the contrary incremental innovators compared to Fred. Olsen and Ulstein. This indicates that, as in the business model discussion, that there is no clear pattern for the same type of maritime actor applying the same strategy when innovating their business models.

A comment regarding that Ulstein and Fred. Olsen share many of the same characteristics, is that both the *segmented* and *closed/proactive* type was not expected to occur among maritime actors. It is interesting to note that these firms commented that the cluster network was not a prominent source of innovations in practice, which contradicts insights from the maritime industry review. Both Ulstein and Fred. Olsen evaluated the cluster as only an indirect source of innovation and claimed that the level of information sharing is often exaggerated. Since these firms do not believe in the cluster's function for sharing and obtaining innovations, it is not surprising that these firms are considered *closed* and as low on external involvement. The interviewees from both firms also highlighted that the firms have a financial structure that enables their possibilities of implementing innovations. That these firms conduct highly radical and industry changing innovations therefore coincide well with theories of larger, financially strong companies being better suited for business model innovations. This may have contributed to Ulstein and Fred. Olsen to becoming industry leaders, as literature also claimed would be the case for financially strong business model innovators.

Another interesting observation is that the interviewees from Wilh. Wilhelmsen and Erling Haug stated that the industry structure, of traditional and conservative maritime actors and associated product portfolios, are binding to what business areas they can expand to. In addition, these firms highlighted limited capacity as a hinder for innovation. Regulations were also considered to highly limit the innovations Wilh. Wilhelmsen and Erling Haug chose to conduct. These observations seem to fit well with the categorizations of these firms in the context of business model innovator strategies, where gradual adjustments and careful consideration of the maritime industry structure and regulatory environment dominate. In relation to Ulstein and Fred. Olsen, it is also intriguing that the factors Wilh. Wilhelmsen and Erling Haug point to as hinders to business model innovations are external to the companies, while Ulstein and Fred. Olsen mention internal factors that they to a large extent control. Consequently, it may be easier for Ulstein and Fred. Olsen to choose their business model

innovator strategies, while Wilh. Wilhelmsen's and Erling Haug's possible strategies might be limited by their external influencing factors.

The results for Kongsberg Maritime were to some extent diverging, with the firm being evaluated as *type 2*, with *low/medium level of differentiation*, as expected, but unexpectedly as *closed/reactive*. Both of these characteristics are regarded as unfavourable strategies in business model innovation literature. Kongsberg Maritime's low score on these business model innovator strategies is caused by their strong focus on internally developed innovations that improve quality and functionality, combined with a lack of prioritization of innovations and a focus on innovations mainly existing on higher levels of the organization. In addition to these hinders, Kongsberg Maritime, as Wilh. Wilhelmsen and Erling Haug, mentioned the traditions and strict structure of interaction between the maritime actors as an important hinder for innovation. These factors can explain why Kongsberg Maritime is regarded as low on the scales of business model innovator types.

Lastly, we would like to point out that Ulstein and Wilh. Wilhelmsen not only show a deliberate relation to their business models, but also to how they innovate them.

### **6.3. Profitability**

As the framework presented, the findings of maritime actors' business model innovator strategies, discussed in the latest section, are highly related to the evaluation of profitability. To evaluate to what extent the maritime actors' strategies can be linked to profitability, we will look at whether their strategies are considered to be what is defined as ideal in this thesis.

In Ulstein's case, findings indicating ideal strategies have been identified. According to the theories of Giesen et al. (2009) and Taran et al. (2015), Ulstein was identified as both *analytical* and *adaptable*, as well as a *closed/proactive* innovator, which are considered ideal strategies. The *analytical* capability was not initially expected, but this finding strengthens that Ulstein's innovation capabilities may lead to high profitability. Ulstein was however not found to have an ideal result for Chesbrough's (2007) theory, as they were characterized as *type 3; segmented*. Next, Wilh. Wilhelmsen was also found to have indications of ideal strategies. Especially because they were identified as having the highest level of external involvement in Chesbrough theory, i.e. *type 6, adaptive*. Also, they were identified as being *aligned* from Giesen et al.'s theory and following an *open/proactive* innovator strategy from Taran et al.'s presentation. Lastly, Erling Haug was the only actor having results according to expectations. They were seen as *type 4, externally aware*, in Chesbrough's theory, as being *aligned* from Giesen et al.'s presentation and as being an *open/reactive* innovator according to Taran et al.'s

theory. Their business model innovator strategies are therefore considered ideal. Fred. Olsen also had indications of a partially ideal strategy, but not to the same extent as the highlighted actors above, while Kongsberg Maritime did not fit any of the ideal strategies the literature point to. We thus conclude that Ulstein, Wilh. Wilhelmsen and Erling Haug are considered the most ideal business model innovators of the case study actors. From our formulation of an ideal strategy, an ideal type of business model innovator strategy was considered the most profitable strategy for a firm to follow. Based on this, it is likely to believe that these actors perform better than the other case companies with regards to their profitability. In this section, we use the average profitability of each case actor from 2000 to 2014 to compare with the average profitability for their maritime category, here referred to as industry counterparts. Table 11 provides an overview.

**Table 11:** Average profitability of case actors and industry counterparts  
Source: Proff Forvalt, 2016

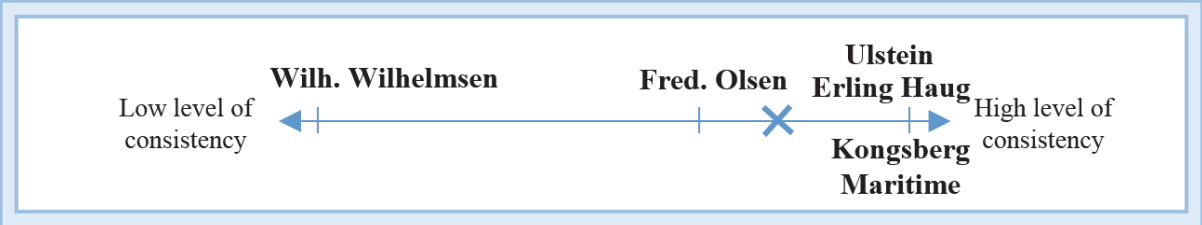
Maritime category	Case actor	Average profitability (%)	
		Case actor 2000-2014	Industry counterparts 2005-2014
Shipping company	Wilh. Wilhelmsen	10.8	11.1
	Fred. Olsen	27.5	
Shipyard	Ulstein	13.4	7.8
Maritime equipment supplier	Kongsberg Maritime	7.3	15.6
	Erling Haug	16.8	

Based on this evaluation we find that Fred. Olsen has the highest average profitability of all the case companies for the period 2000-2014 and more than twice the profitability of the average for shipping companies. Since this actor was not identified as ideal to the same extent as the other ideal actors, this contradicts our expectation. From this, we find that there is partial consistency between our expectation and this finding; Fred. Olsen has partially ideal strategies and at the same time a high level of profitability. The profitability analyses from the case study also show that all firms that were evaluated as ideal, Ulstein, Wilh. Wilhelmsen and Erling Haug, have performed above their industry average in the later years, but in the recent years have experienced a steep reduction in profitability. On average, we find that Ulstein's and Wilh.



Wilhelmsen’s profitability is reasonable. Wilh. Wilhelmsen has the same level of profitability as the average for shipping companies, but performs substantially lower on profitability compared to their industry counterpart Fred. Olsen. In relation to our expectation, we find that Wilh. Wilhelmsen’s profitability is not consistent with the firm being evaluated as ideal in its business model innovator strategies. With Ulstein, no industry counterpart was evaluated in the case study, but we find that Ulstein has almost twice the profitability of the shipyard category’s average profitability, regardless of evaluating Ulstein Group ASA and Ulstein Verft ASA. Our expected link between ideal business model innovator strategies and profitability might therefore be correct for Ulstein. Erling Haug’s profitability is marginally higher than the average profitability for maritime equipment suppliers. It is however worth noting that the company has a substantially higher profitability from 2005 to 2014, at 22 percent. This can be explained by the firm being acquired by a financially strong firm, Axel Johnson, in 2006. Erling Haug also performs better than Kongsberg Maritime when it comes to profitability, but considering that Erling Haug is a far smaller company, it might be difficult to make direct comparisons. Related to our expectation, we find that Erling Haug’s profitability can be linked to the firm being an ideal business model innovator, at least from 2005 where profitability is comparable for industry counterparts. Kongsberg Maritime has a low average profitability compared to the average for their maritime category. This fits well with our expectation, since they were regarded as not having ideal business model innovator strategies.

To summarize, we find the expectation for how the ideal strategies translate into profitability in three out of five cases is consistent. Still, the results for Fred. Olsen and Wilh. Wilhelmsen contradicts a clear link between ideal business model innovator strategies and profitability; Fred. Olsen does not have an ideal strategy, but the highest profitability relative to their industry counterparts, while the situation is opposite in Wilh. Wilhelmsen case. Therefore we can only define a vague the link from ideal business model innovator strategies to profitability.

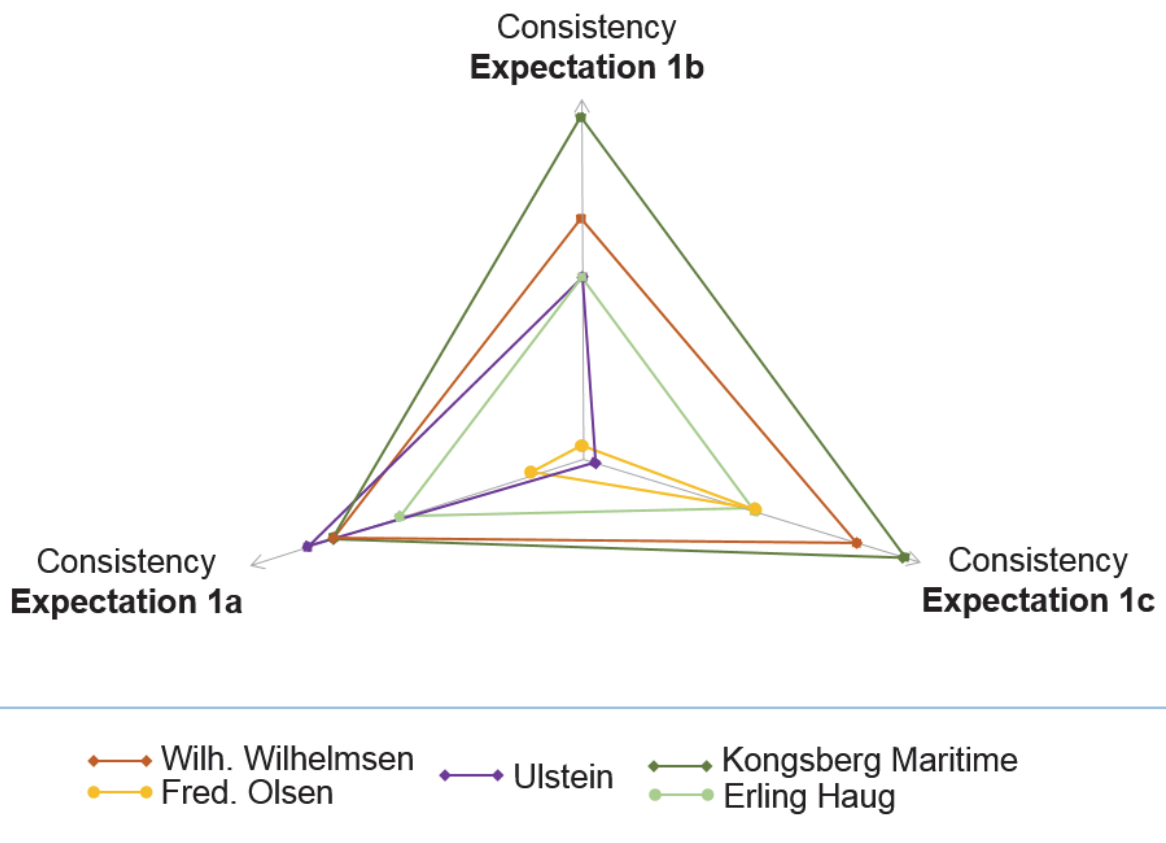


**Figure 28:** Level of consistency to expectation 3; Maritime actors that follow ideal business model innovator strategies perform better with regards to profitability relative to their industry counterparts.

## **6.4. Case study findings compared to expectations**

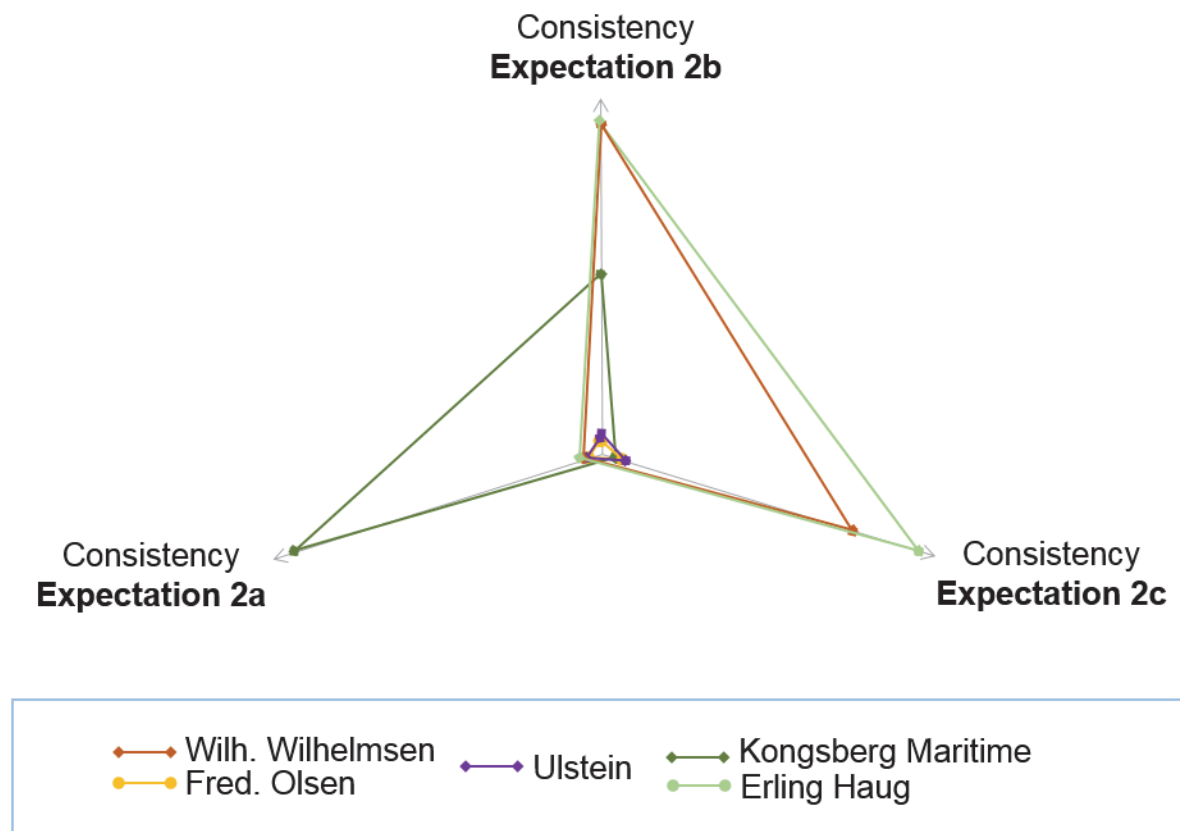
The following figures summarize the consistency between our expectations and the case study findings. In figure 29 and 30, the axes indicate the level of consistency, where a low level is placed in origo. In figure 31, the vertical axis represents the case study companies' average profitability relative to their industry counterparts, while the horizontal axis represent the level of ideal strategy relative to the case companies.

## Business model framework: Consistency with expectations



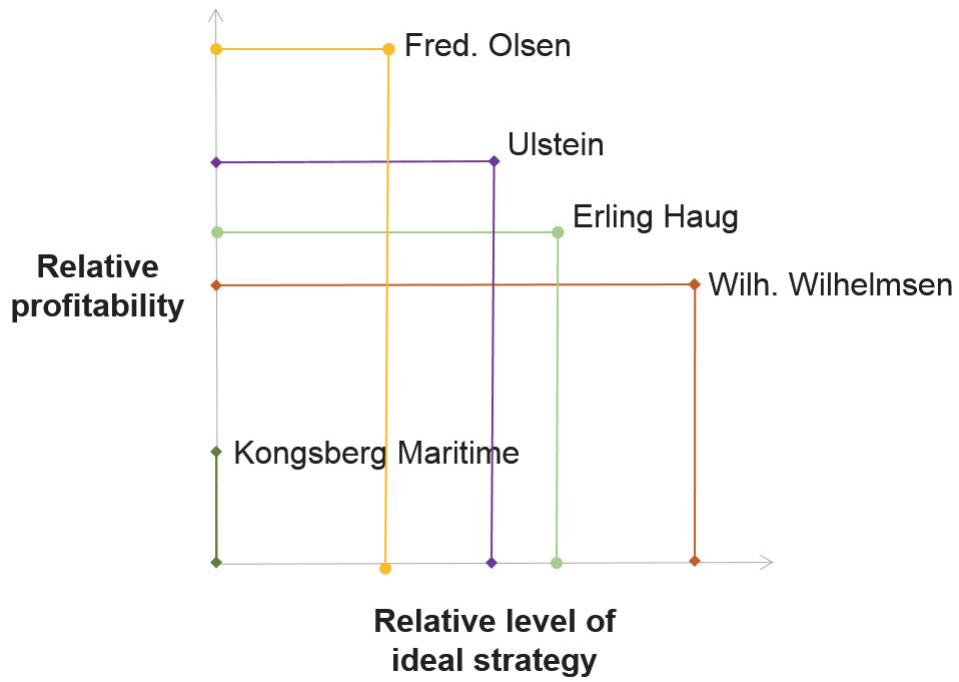
*Figure 29: Overview of the level of consistency between expectations 1a, 1b, 1c and case study findings*

## Business model innovation framework: Consistency with expectations



*Figure 30: Overview of the level of consistency between expectations 2a, 2b, 2c and case study findings*

## Profitability framework: Relation between ideal strategy and profitability



*Figure 31: Relative profitability of case companies*



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## 7. CONCLUDING REMARKS

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In this section, the conclusions from the thesis will be presented. First, we will revisit the thesis' research question. Second, the significance of the thesis will be provided through evaluating to what extent, and how, the goals presented in the introduction have been met. Lastly, implications for managers as well as limitations and implications for future research are provided.

### 7.1. Research question revisited

Through our evaluation of the framework's expectations in the discussion, we have revealed findings that will provide an answer to the thesis' research question. Our research question was formulated as follows;

- *How do Norwegian maritime actors apply and innovate their business models?*
  - *Are these approaches linked to profitability?*

The five case interviews with different maritime actors provided the following. Value proposition, profit/revenue generation and value chain architecture are recurring components in the business model definitions with the majority of our case actors. In general, there exists uncertainty regarding the content of the business model concept in the maritime business. The finding that two out of five case actors do not have a significant relation to their business model might illustrate this. As for the utilization of the business model, only one case actor use their business model as a separated term in their strategic operations. With regards to how maritime actors innovate their business models, the case actors to a small extent use open networks as a source of innovation. There also seems to be a division between business model innovator strategies among the maritime actors, where two actors were considered incremental and two were seen as radical.

As we did not find relevant literature concerning the link between firms applying their business model and profitability, the last part of our research question was studied based on the link between ideal business model innovator strategies and profitability. A vague link between having a high level of ideal strategy and being profitable is detected for three out of five case actors. However, the case actor with the best profitability compared to its industry counterparts only had a partially ideal business model innovator strategy. Also, one of the case actors with an ideal strategy does not have average profitability that exceeds industry counterparts. We are

therefore not able to provide a definite answer to the link between the case actors' business model innovator strategies and profitability.

## **7.2. Significance**

To identify the significance of this thesis we will address the goals that were presented in the introduction.

First, we believe that we through our presented findings have answered the first goal; to understand the relevance of the literary description of the business model and business model innovation concepts in practice. Related to the business model concept, we believe that the theoretical structure of a business model can be useful for maritime actors since a number of the case study firms showed similarities to literature when presenting their business model. It is still evident that there exists a need to clarify what the content of the business model concept is in order to increase the concept's relevance and applicability for all types of firms, including the maritime firms. Regarding the business model innovation concept, we find that the general categorization of business model innovator strategies apply to maritime actors. However, when considering business model innovator strategy in a profitability context, i.e. ideal strategies, their relevance for maritime actors is considered fairly low; successful business model innovators in the maritime industry, with higher average profitability relative to industry counterparts, does not necessarily adopt ideal business model innovator strategies, and vice versa. Consequently, our case study shows that both business model and business model innovation literature is applicable in practice, but that ideal business model innovator strategies' only can be vaguely linked to profitability in practice.

Second, we have identified theories on how business models should be innovated to achieve high profitability. Taran et al. (2015) and Giesen et al. (2009) present business model innovation strategies being directly linked to a firm's profitability. Chesbrough (2007) presents business model innovation strategies that are based on the value the strategy creates. In this thesis we made the assumption that a valuable strategy for a firm is also profitable. Based on this, the business model innovation strategies presented by these authors are identified as applicable for achieving high profitability. Still, to what extent these theories can be assessed as reliable can be questioned as one of the paper's conclusions are based on a small set of data, one provides no empirical evidence and the one with a larger data set, is not an academic paper. This thesis thus identifies that there is a need for more comprehensive research on this area.

Third, we were unable to identify any pattern for actors in the same maritime category from our findings. This was the case both for how business models were applied and how they



were innovated. It can therefore be questioned whether these patterns exist in the maritime industry.

Fourth, we sought to understand whether business model innovations for Norwegian maritime actors are enabled by the same factors as their realignment capabilities. We believe this goal has been addressed on the basis of the adaptability factors highlighted in the maritime industry review. The Norwegian maritime cluster is, by Thomassen (2016), argued to contribute to a unique adaptability for the maritime firms. A significant finding in this thesis is that a number of the maritime actors do not consider the cluster important for achieving business model innovations. Another observation is that the maritime equipment suppliers were not necessarily the most innovative, as was argued in the maritime review. Moreover, the claim that access to capital highly influence the maritime firms' ability to innovate has been confirmed in our case study. Access to capital was found to be either an enabler or hinder to innovation, depending on its availability. The adaptability of maritime industry in Norway was also argued to be facilitated by regulations. A significant finding contradicts this claim, as a number of actors regarded regulations as a significant hinder to innovation. From this, we have in a number of cases disproven that the same factors that enable Norwegian maritime actor's realignment abilities enable business model innovations.

### **7.3. Implications for managers**

For managers in maritime firms, this thesis can provide insights to what extent business model approaches and business model innovator strategies are used in the maritime industry. As the business model concept is relatively new in managerial spheres and as our findings indicate that a clear understanding of the concept is not present in our case actors, managers should evaluate to which degree a use of the concept is appropriate in their firm. The concepts of strategy and business models do at some level coincide, so managers should be aware of the confusion between the two concepts to avoid misunderstandings within the organization. Related to this, by clarifying an understanding of their business model approach, i.e. whether they have an economic, operational or strategic approach, prioritizations might be easier to justify for the entire organization. Our findings also show that managers should be aware of that maritime firms can perform well with regards to profitability in spite of not necessarily innovating their business model according to theoretically ideal strategies. Thus, there is no definite answer to how the maritime firms should innovate their business model. To avoid pitfalls and losing potential competitive advantages, learning which business model innovation strategies that are not recommended can also be useful for managers.

Another observation relevant to managers of maritime firms is their business model innovation efforts might be influenced by the firm's external factors. For example, the extent of regulations can limit certain maritime actors' ability to innovate. Managers of these firms should keep updated about the development in regulations to ensure that their business model innovations are implemented according to regulations. The structure of supply and demand between the maritime actors can also limit what business model innovations are possible to conduct for a maritime firm and how they can rotate their strategy. Moreover, the importance of the cluster network has been questioned in this thesis. Evaluating to what extent the maritime firm leverages this network and benefits from the exchange relationship can therefore be necessary. A vague link from the level of financial resources to the level of radicality of the business model innovation has also been identified. In this thesis' case study we found that financial resources may both enable and limit the maritime firm's ability to innovate their business model. We also discovered that the access to financial resources may decide whether incremental or radical innovations are most relevant for the firm. According to this thesis' case study findings, there are indications of radical innovation being the most favourable for firms with a high level of available financial resources. Incremental innovations might be more applicable for firms involved in more conservative business areas where revenue is continually received, but without having any extra resources available for innovations. Managers must therefore assess their access to resources before conducting business model innovations.

#### **7.4. Limitations and implications for future research**

Some of the sources that constitute the foundation for this thesis can to some extent be biased. First, the literature applied in this thesis is mainly based on theoretical approaches, and to a lesser degree based on empirical data and case studies. Our literature review may therefore be biased by the subjective views of the selected authors. Second, the sources used in the maritime industry review are to a large extent based on reports from Menon Business Economics. This is due to a scarcity of public information relevant for our thesis, and it might create a biased representation of the Norwegian maritime industry. Lastly, the empirical evidence related to business model innovations are largely based on IBM's Global CEO Study from 2006. Another limitation of this thesis is that our case study is based on a small selection of maritime actors. As the actors in the same maritime categorization also differ in their business areas, our capability to create generalizable results and to identify potential patterns is limited.

Through this work, we have discovered suggestions of implications for future research. By applying our framework on a larger number of case firms than included in this thesis, a better

justification of generalizability would be secured. In order to search for potentially interesting maritime patterns, selecting firms within each maritime category operating in different business areas, would be relevant. In addition to this, our framework could be used in other businesses to better understand the impact business models and business model innovation have in established businesses. Preferably, such businesses should have somewhat the same characteristics as the maritime, following traditional patterns and with experienced actors, in order to relate such findings to our conclusions. As the academic field of business models and business model innovations are in lack of empirical research, conducting quantitative research within these fields would be a useful contribution. We believe that quantitatively researching the link between business model innovation and profitability would be of particular interest.



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# APPENDIX A: INTERVIEW GUIDE FOR NORWEGIAN SHIPOWNERS' ASSOCIATION

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*The interview guide is presented in Norwegian.*

## **Intervjuguide**

*Masteroppgave ved NTNU om  
maritim omstillingsevne og konkurransekraft*

I masteroppgaven ønsker vi å undersøke om norsk maritim omstillingsevne skyldes en bevisst holdning til innovasjon av forretningsmodellen hos bransjens aktører. Med aktør mener vi en norsk maritim bedrift innenfor en spesifikk del av maritim bransje, dvs. rederi, verft, utstysleverandør eller tjenesteyter. Målet for dette intervjuet er å få oversikt over maritim bransje og samspillet mellom de maritime aktørene.

Struktur for intervjuet, samt spørsmål, vil være som følger:

### **1. Om Rederiforbundet**

- a. Hva er Rederiforbundets rolle i maritim bransje i Norge i dag?
- b. Hva fokuserer Rederiforbundet på i sitt arbeid?
- c. Hva mener dere er deres viktigste arbeid?

### **2. Maritim verdikjede**

- a. Hva er sammenhengen mellom aktørene i maritim industri?
- b. Hva er styrkeforholdet mellom aktørene i maritim industri?
- c. Hva er rederienes rolle i den maritime bransjen?
- d. Hvordan foregår tilbud og etterspørsel på tjenester mellom aktører?

### **3. Maritim omstillingsevne**

- a. Hva mener dere er bakgrunnen for maritime aktørers omstillingsevne, som beskrevet i Rederiforbundets rapporter?
- b. Hvilke drivkrefter finnes bak maritime aktørers omstillingsevne?
- c. Hva er forskjellene og likhetene på maritim omstillingsevne mellom aktører i maritim bransje?
- d. Kan dere trekke frem de viktigste erfaringene til den maritime bransjen fra tidligere omstillingsperioder, f.eks. gjennom finanskrisen?
- e. Kan dere beskrive dagens situasjon og framtidsutsikter for den maritime bransjen?

#### **4. Utvikling i maritim industri**

- a. Hvordan har maritim sektor utviklet seg de siste 10-15 årene?
- b. Hvilke endringer har forekommet de siste 10-15 årene?
- c. Gjelder disse f.eks. rammebetingelser, konkurransevilkår eller forhold mellom aktører gjennom f.eks. allianser og vertikal integrasjon?
- d. Hvilke trender har dere sett av innovasjon i maritim bransje de siste 10-15 årene?

#### **5. Innovasjon av forretningsmodeller**

- a. Hvor innovative mener dere de maritime aktørene er?
- b. I hvor stor grad mener dere innovasjoner hos de maritime aktørene er knyttet til innovasjon av deres forretningsmodell?
- c. Hvilke holdninger har dere inntrykk av at maritime aktører har til sin forretningsmodell og innovasjon av denne?
- d. Finnes det innovasjonsmønstre for de maritime aktørene f.eks. i form av type innovasjoner som gjennomføres eller tidspunkt for gjennomføring?
- e. Hvilken påvirkningskraft og innflytelse har de maritime aktørene på hverandre når det gjelder innovasjon av forretningsmodeller?

#### **6. Avsluttende spørsmål**

- a. Har dere anbefalinger til andre vi burde snakke med hos dere eller utenfor Rederiforbundet?
- b. Anser dere deler av informasjonen som har blitt gitt som konfidensiell eller kan den være åpent tilgjengelig?

Dersom dere har spørsmål relatert til intervjuet, gjerne ta kontakt med oss.

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# APPENDIX B: INTERVIEW GUIDE FOR CASE COMPANIES

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*The interview guide is presented in Norwegian.*

## **Intervjuguide** *Masteroppgave ved NTNU om maritim omstillingsevne og konkurransekraft*

I masteroppgaven ønsker vi å undersøke om norsk maritim omstillingsevne skyldes en bevisst holdning til innovasjon av forretningsmodellen hos bransjens aktører. Med aktør mener vi en norsk maritim bedrift innenfor en spesifikk del av maritim bransje, dvs. rederi, verft, utstysleverandør eller tjenesteyter.

Målet for dette intervjuet er å undersøke hvilket forhold bedriften har til sin forretningsmodell og å få innsikt i innovasjoner av forretningsmodellen bedriften har gjennomført de siste 10-15 årene.

Struktur for intervjuet, samt spørsmål, vil være som følger:

### **1. Om bedriften**

- a.** Beskriv kort deres virksomhet, f.eks. historie, antall ansatte, forretningsområder, årlig omsetning.
- b.** Hva er din/deres stilling og hva går den ut på?
- c.** Hva anser dere som deres nøkkelvirkosomhet?
- d.** Beskriv dagens situasjon for deres virksomhet.
- e.** Hvordan anser dere dagens lønnsomhet sammenlignet med de siste 10-15 årene?

### **2. Drivkrefter bak omstilling**

- a.** Hvilke drivkrefter vil dere si fører til omstilling av deres virksomhet?
- b.** På hvilken måte har behovet for omstilling i bransjen endret seg de siste 10 årene?
- c.** Hva slags forhold har dere til konkurrenter?
  - i.** Inngår dere f.eks. allianser?
- d.** Har deres forhold til konkurrenter og andre aktører i bransjen endret seg som følge av dagens krevende omstillingsperiode?

### 3. Forretningsmodell

- a. Hva vil dere si er deres forretningsmodell? Hvilke komponenter består den av?
- b. Har dere et bevisst forhold til bedriftens forretningsmodell?
- c. På hvilken måte benytter dere forretningsmodellen?
  - i. Brukes den som et utgangspunkt for å klassifisere komponentene og forstå samspillet mellom aktivitetene der eller bruker dere den som et verktøy for å gjennomføre endringer?
  - ii. Hvis dere skal gjøre endringer i forretningsmodellen, analyserer dere hver komponent for seg eller blir avgjørelsene tatt ut ifra et oversiktlig perspektiv av komponentene?
- d. Har dere et skille mellom det dere beskriver som bedriftens strategi, bedriftens forretningsmodell og bruk av taktikk i markedet?
- e. Hva er deres hovedmål ved bruk av forretningsmodellen?

### 4. Innovasjon av forretningsmodell

#### 4.1 Innovasjonsarbeid i bedriften

- a. Hvordan sikrer dere at innovasjoner som trengs identifiseres og implementeres? Gjøres dette ved å:
  - i. Benytte intern kunnskap og evne?
  - ii. Oppsøke interne kilder til markedsinformasjon?
  - iii. Skape en kultur for innovasjon og utforskning av nye muligheter?
  - iv. Ha ledelse som er effektiv og inspirerende?
  - v. Sikre åpne nettverk og tett samarbeid med andre aktører?
  - vi. Integrere informasjon fra partnere?
- b. Forbereder dere bedriften på endringer ved å være proaktive i innovasjon av forretningsmodellen eller reagerer dere på endringer i eksterne faktorer?
- c. Gjør dere mindre endringer i forretningsmodellen gradvis eller gjøres større endringer i løpet av en kortere periode?
  - i. Gjør dere noen ganger endringer i kjernevirksomheten?
- d. Samarbeider dere med andre aktører for å oppnå innovasjon i forretningsmodellen eller gjør dere dette på egenhånd?
  - i. Hvis dere benytter andre aktører, hva slags avtaler gjør dere? Benytter dere f.eks. lisenser eller joint ventures?
  - ii. Hvis ikke, gjør dere oppkjøp eller oppretter spin-offs for å oppnå innovasjon av forretningsmodellen, i tillegg til interne initiativer?
- e. Dersom dere har latt være å gjøre endringer i forretningsmodellen, hva skyldes det? Har det f.eks. vært grunnet:
  - i. Et fokus på udifferensierte virksomhetsområder som ikke krever stor grad av innovasjon?
  - ii. Mangel på ressurser til å drive innovasjon?

#### **4.2 Innovasjon av forretningsmodellen siste 10-15 år**

- a.** Hvilke innovasjoner av forretningsmodellen har dere gjennomført de siste 10-15 år?
- b.** Hvor mange av innovasjonene i forretningsmodellen de siste 10-15 år har påvirket:
  - i. Hvordan inntekter oppnås?
  - ii. Kun én komponent av forretningsmodellen, f.eks. endringer i produkt eller tjeneste?
  - iii. Flere komponenter og organiseringen av disse, f.eks. endringer i verdikjede?
  - iv. Samarbeid, partnerskap og allianser med andre maritime aktører?
  - v. Konkurransvilkårene i den maritime industrien?
- c.** I hvilken grad har endringene i forretningsmodellen de siste 10-15 år vært innenfor et område som er nytt for:
  - i. Deres bedrift?
  - ii. Markedet dere er i?
  - iii. Den maritime industrien?
  - iv. Verdensmarkedet generelt?
- d.** Hvilke interne og eksterne faktorer har bidratt til innovasjon av deres forretningsmodell de siste 10-15 år?
  - i. Av interne faktorer, har innovasjoner skyldtes et nytt produkt eller tjeneste, mangel på vekst eller stor tilgang på ressurser?
  - ii. Av eksterne faktorer, har innovasjonen skyldtes nye aktører eller endringer i verdikjeden, konkurranse, kundepreferanser, kundesegmenter, teknologi, reguleringer eller miljøhensyn?
- e.** Hvordan henger innovasjonene dere har gjort i forretningsmodellen sammen med lønnsomheten?

#### **5. Avsluttende spørsmål**

- a.** Har dere anbefalinger til andre vi burde snakke med hos dere eller utenfor bedriften?
- b.** Anser dere deler av informasjonen som har blitt gitt som konfidensiell eller kan den være åpent tilgjengelig?

Dersom dere har spørsmål relatert til intervjuet, gjerne ta kontakt med oss.