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Diversification in the Norwegian Power Industry

A study of alterations of business portfolios in
light of an uncertain future

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PROBLEM DESCRIPTION

The purpose of this thesis is to investigate diversification in the Norwegian power industry, by looking at alterations of business portfolios in light of an uncertain future. Case study methodology is applied, with interviews of 15 CEOs from different Norwegian power companies.

PREFACE

This master's thesis was written during the spring of 2015 as the final work of our Master of Science in Industrial Economics and Technology Management at NTNU in Trondheim, Norway. The thesis is a part of our specialization in Strategy and International Business Development.

The purpose of the thesis is to examine diversification among the actors in the Norwegian power industry and uncover how and why the companies in the industry change their diversification when faced with an uncertain environment.

The work has been both challenging and rewarding. It has given us the possibility to gain in-depth insight into the theoretical perspective of diversification. At the same time, we have accumulated knowledge about an industry that we knew little about before the research began.

We would like to express our thankfulness to our 15 case companies and their CEOs for sharing their knowledge and thoughts with us. Their contributions have been essential for this study. Lastly, we would like to thank our academic supervisor, Arild Aspelund, and our co-supervisor Rikke Stoud Platou, at the Department of Industrial Economics and Technology Management, for valuable guidance, feedback and support throughout the work with this thesis.

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SUMMARY

In this thesis the diversification among the companies in the Norwegian power industry is studied. The industry has historically been a traditional and regulated industry with only small changes the last decades. However, the industry is now facing a highly uncertain future with many possible large changes. The literature on how companies strategically approach the future by changing their composition of business areas is characterized by large disagreements and no conclusive findings. This has led to this thesis' research questions, which aims to uncover how and why the companies in the industry change their diversification when faced with a high environmental uncertainty.

To answer the research questions a multiple case study approach was utilized and a theoretical foundation was built based on the theoretical fields of environmental uncertainty and diversification. Interviews with 15 CEOs in the Norwegian power industry were conducted and together with data collection through written sources, this formed the empirical evidence for this thesis. The analysis of the 15 cases were done using cross-case analysis, as we wanted to reveal themes and conditions that involved all the cases and detect similarities and differences across the case companies.

The study has several contributions to theory. First of all, the diversification has increased among the actors in the Norwegian power industry, when exposed to high environmental uncertainty. This implies that broadening the business portfolio would be a good choice when the future is uncertain, supporting the view that promotes diversification. However, the findings contradict the theory claiming that unrelated diversification is most advantageous when the environment is uncertain, as related diversification is preferred over unrelated diversification by the companies in the industry. Further, the study reveals that the companies' reasons for changing their diversification is mostly influenced by internal factors. This supports the theory, which emphasize that utilizing a company's resources are more important than adapting to the external market.

SAMMENDRAG

I denne masteroppgaven er diversifisering blant selskapene i den norske kraftbransjen studert. Historisk har bransjen vært en tradisjonell og regulert bransje som har gjennomgått få endringer de siste tiårene. Bransjen står nå imidlertid overfor en svært usikker fremtid med mange mulige endringer. Litteraturen angående hvordan selskap strategisk tilnærmer seg en usikker fremtid ved å endre sammensetningen av forretningsporteføljen er preget av store uenigheter og ufullstendige funn. Dette fører til oppgavens forskningsspørsmål, som har som mål å avdekke hvordan og hvorfor selskapene i bransjen endrer sin diversifisering når de står overfor stor usikkerhet i omgivelsene.

For å besvare forskningsspørsmålene benyttet vi forskningsmetoden multiple case study. Det teoretiske grunnlaget ble basert på teori om diversifisering og usikkerhet. Intervjuer med 15 konsernsjefer i den norske kraftbransjen ble gjennomført og sammen med datainnsamling fra skriftlige kilder dannet det vårt empiriske grunnlag for denne masteroppgaven. Analysen av de 15 case-selskapene ble gjort ved hjelp av cross-case analyse, ettersom vi ønsket å avdekke temaer og sammenhenger som involverte alle case-selskapene og oppdage likheter og ulikheter på tvers av de.

Studien kommer med flere interessante bidrag til teorien. Først og fremst, diversifiseringen har økt blant aktørene i den norske kraftbransjen når de har vært eksponert for høy usikkerhet. Dette kan innebære at det vil være et godt valg å utvide forretningsporteføljen når fremtiden er usikker, noe som støtter synet som fremmer diversifisering. Funnene strider i midlertidig imot teorien som hevder at urelatert diversifisering er fordelaktig hvis miljøet er usikkert, ettersom funnene viser at relatert diversifisering er foretrukket over urelatert blant selskapene i den norske kraftbransjen. Videre viser studien at selskapenes grunner for å endre sin diversifisering er mest påvirket av interne faktorer. Dette støtter teorien som understreker at å utnytte et selskaps ressurser er viktigere enn å tilpasse seg det eksterne markedet.

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INTRODUCTION

CHAPTER 1

INTRODUCTION

The development in technology and other areas have prompted major changes in several industries. In Norway for instance, both the telecom industry and the banking industry have gone through major changes the last decade. Companies must be constantly aligned with their environment, and thus will a changing environment require a company to change (de Wit & Meyer, 2010). However, when the future environment is uncertain and unclear, it can be difficult to foresee the future changes and thus extremely hard to adapt to them.

The Norwegian power industry is now facing a highly uncertain future, with uncertainty in all parts of the value chain. Historically, the Norwegian power industry has been a traditional and regulated industry with well-established actors, with only small changes the last decades. The industry has for a long period of time been characterized by long-term investments and a low rate of innovation. Thus, the companies have limited experience with change and especially with radical changes, which might become the case in this industry.

1.1 RESEARCH QUESTIONS

Given a traditional industry facing an uncertain future, it would be interesting to gain insight into how companies in the industry strategically approach the future. This topic is rather comprehensive and the thesis will therefore focus on some parts of

a company's strategy. A company's composition of its business areas is an important part of a company's strategy, which has been widely covered in the literature. However there is seemingly large disagreements and no conclusive findings on the topic, making it interesting and applicable for further research. Some researchers believe that a diversified composition of business units will strengthen the company, as it gives the company several feet to stand on and may lead to risk reduction and synergy gains between the areas (Reed & Luffman, 1986). Other researchers, on the other hand, believe that a company should focus their resources on a few business areas to excel in those by bypassing the competitors (Biolos, 1997). As there are large differences in the literature, it would be interesting to look closer into the topic by seeing how the composition of the business portfolio change when the environment is uncertain. This leads to the following research question:

RQ1: In what way does the diversification among the actors in the Norwegian power industry change when faced with an uncertain future?

RQ1 is aimed to uncover how the diversification in an industry has changed. Many factors may have influenced this alteration, and it is likely to be very complex. In order to attempt to understand a part of why an industry has changed, it would be interesting to find reasons for

why companies have changed their degree of diversification by looking closely at each alteration of their business portfolio and the factors that have influenced it. This leads to our second research question:

RQ2: Why do companies in the Norwegian power industry enter and exit different business areas?

The first part of our research question is of a descriptive nature, as we strive to study the characteristics of the diversification situation. The second part of our research question is in turn explanatory of nature, as we seek to explain and understand why companies have entered and exited different business areas. To help answer our research questions we have utilized literature from the fields of environmental uncertainty and diversification, in addition to collecting data through fifteen interviews and other relevant data from written sources.

Overall, the results of our research will contribute to the research stream of diversification and clarify the discussion of the topic. The research will further provide an insight into how an industry faced with an uncertain future has used diversification and present some of the main reasons for why they have entered and exited the business areas. It can also be useful for the managers of firms facing an uncertain future, as it can make them more knowledgeable of diversification as a

strategy in an uncertain environment and of the factors affecting their decisions to diversify.

1.2 GUIDE TO READER

Overall, the thesis is structured around propositions, which help us answering our research questions, and help the reader to follow our reasoning.

The theoretical foundation of this thesis is presented in Chapter 2 and 3. Based on this the propositions are presented in Chapter 4. The methodology used in this study is put forward in Chapter 5, where we also explain the research process and choices we made during the research, including how the interview process was carried out. Our empirical foundation is presented through Chapter 6 and Chapter 7, which respectively include the industry review and the case studies of the fifteen case companies. In Chapter 8, the cross-case analysis is presented, while in Chapter 9 the propositions presented earlier are answered based on the empirical findings and the cross-case analysis. In Chapter 10 and 11, our discussion regarding the implications of our findings and the limitation of our study is presented. The thesis is closed with answering the research questions in the conclusion presented in Chapter 12.

THEORETICAL FOUNDATION

CHAPTER 2

ENVIRONMENTAL UNCERTAINTY

This section includes an introduction to environmental uncertainty, followed by an explanation of different types of environments and different types of uncertainty. This section ends with strategic foresight being presented.

2.1 INTRODUCTION

A turbulent and uncertain environment requires the companies to analyse their environment and try to foresee the future. The more uncertain the environment is, the more difficult it is for a company to understand and handle the environment (Khandwalla, 1977). Organizations must achieve both a strategic fit with their internal structures and processes, as well as with their external environment.

The environment surrounding a company can affect how strategies arise and how strategic decisions are made. When decision-makers lack information about the activities and events in their external environment and can't be sure what the major changes are or will be, environmental uncertainty occurs. As shown in Figure 1, environmental uncertainty can be categorized based on the rate of change and the complexity (Duncan, 1972). An environment with a high uncertainty will have a high complexity and be very dynamic as the rate of change is high.

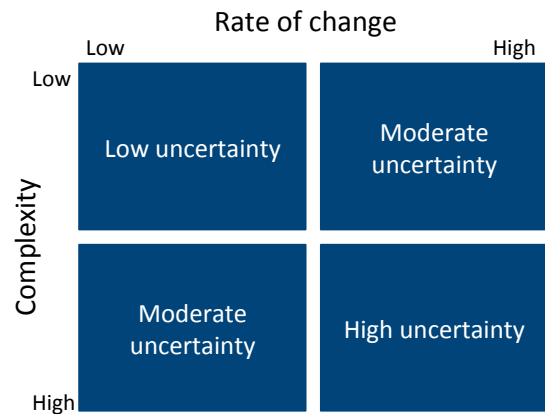


FIGURE 1: BREAKDOWN OF ENVIRONMENTAL UNCERTAINTY

2.2 TYPES OF ENVIRONMENTS

Environmental uncertainty has been emphasized in the literature as an important issue for the decision-makers in a company. The opportunities and threats that occurs in the external environment are hard to notice and even more difficult to respond to. Environmental uncertainty arises when the external environment is highly unpredictable and the managers have little information about changes in the environment (Vecchiato & Roveda, 2010). There are different components in the external environment that carries uncertainty. Dill (1958) divides the external environment into *general* and *task* environments. The corresponding terminology within strategic management is *micro* and *macro* environments, where micro corresponds to task and macro to general. The business microenvironment or task environment includes the elements that directly affects the business, the forces that control the competition in an industry.

Porter (1985) identifies these forces to be related with competitors, customers, suppliers, new entrants and substitute or complementary products. The general- or business macro environment in turn, includes the elements that indirectly affects the firm, such as the political, economic, ecological, societal and technological systems, surrounding the business microenvironment (Fahey & Randall, 1998).

2.3 TYPES OF UNCERTAINTY

As mentioned, environmental uncertainty is defined with the assumption that it occurs when the information about the environments surrounding the companies is lacking or insufficient. Milliken (1987) divides environmental uncertainty into three different types of uncertainty that together are the overall uncertainty the decision-makers face; state uncertainty, effect uncertainty and response uncertainty. State uncertainty is when there is little understanding about how different elements in the environment might change. The second type, effect uncertainty, is the incapability to foresee what the impact of the changes in the environment will have on the company. The third and last type, response uncertainty, is the inability to understand what the feasible responses are and what consequences the responses have.

2.4 STRATEGIC FORESIGHT

Uncertainty is a key issue for strategic decision-makers. Battistella and De Toni (2011) say that analysis of the future should be integrated in the strategy so that companies can understand the uncertainty and complexity of the future, and include

this knowledge in the decision-making process. To understand the environmental uncertainty, strategic foresight can be used. Strategic foresight describes the activities and processes that help decision-makers decide on the course of the company's future (Vecchiato, 2012b). Strategic foresight activities can be categorized with help from three main criteria, namely the field of investigation, the scope of analysis and the time horizon considered. The first criterion, field of investigation, tries to capture the domain of the foresight activities. The field may vary as strategic foresight could for instance, be used to understand the microenvironment with a competitor analysis, or it could be utilized to understand the macro environment by looking into the political landscape. The second criterion, scope of analysis, considers the breadth of the scope of the foresighting activities. This may range from a scope of the overarching industry to a scope of a specific organizational unit. The last criterion captures the time horizon that the foresighting activities are meant to cover.

There are different opinions and various empirical support for strategic foresight in the literature. When a company is faced with an uncertain future, there are two main schools that dominate the literature; the planning and the adaptive approach. The planning approach involves predicting the future and positioning the company accordingly (Ansoff, 1979). This view states that as uncertainty increases, organizations that analyse the changing situation more thoroughly will outperform those who don't (Wiltbank, Dew, Read, & Sarasvathy, 2006). The adaptive approach on the other hand, suggests that organizations should avoid analysing the

future and instead position themselves for quick responses to unpredictable events as they occur (Mintzberg, 1994). Strategic foresight has been criticized of following the planning approach and focusing on predicting the future, and questions have been raised toward the reliability of the forecasting in the long run. Mintzberg (1994), among several, believes that to handle uncertainty the organization should be adaptive and flexible and not use time on planning. The foresight authors

however, answers the criticism and states that the value in strategic foresight isn't to predict the future, but preparing to deal with the future and remain matched to the environments and the changes (Tsoukas & Shepherd, 2009; van der Heijden, Bradfield, Burt, Crains, & Wright, 2002). Vecchiato (2012a) argues that strategic foresight tries to bridge the gap between the planning and the adaptive approach by suggesting that the companies plan in order to strengthen their capability to adapt.

CHAPTER 3

DIVERSIFICATION

Strategic foresight can, as mentioned, be seen as a way to prepare the company to deal with future changes and keep the company aligned with the environment. Companies may prepare for the future by exploring and entering new business areas, or they can for instance exit some areas to be able to focus the resources on areas that may become important. The entering and exiting of business areas change the composition of the business portfolio and likely also the degree of diversification. In this section the topic of diversification will be elaborated. First the concept will be defined, followed by an explanation of reasons for diversification. Furthermore, the mode and direction for diversification will be presented. Lastly, the relationship between diversification and performance will be debated, showing three models that portrait the relationship.

3.1 INTRODUCTION

Diversification is a topic that has received a considerable amount of attention in the strategic management literature for decades, however there is still a high degree of inconsistencies and disagreements among researchers. There are no common agreements regarding many aspects and the researchers are not even united about the definition of diversification. Further there are also differences in the literature about what and which situations influence a company to diversify. Additionally, one of the most covered and yet most controversial topics

within corporate diversification is the effect on performance and especially on the performance differences between related and unrelated diversification. All in all, there are many fields related to diversification that are characterized by inconsistencies, and contributions to the field that can help clarify the topics are thus desirable.

3.2 DEFINITION

Gort (1962) defines diversification as an increase in the heterogeneity of markets served by an individual firm, while Ansoff (1958) presents a more specific definition of diversification, which defines it as a strategy for company growth which requires the firm to enter a new market or industry, while also creating a new product for it. Some years later Berry (1975) proposed that diversification represents an increase in the number of industries in which a company is active in. It is worth noticing that these early definitions do not include concepts of synergy and resource sharing, and further they take the industry or market boundaries to be given. Later definitions have used the word “business” instead of “industry”, making the boundaries more open to subjectivity as it takes the companies’ perspectives (Ramanujam & Varadarajan, 1989). Other attempts at defining diversification, try to capture the multidimensional nature of diversification, as for instance Booz, Allen and Hamilton (1985) which try to capture the goals of diversification, the direction

and the means by which it can be accomplished. According to them, diversification is a means of spreading the base of a business to achieve improved growth and/or reduce the overall risk that a) includes all investments besides the ones that support the existing business, b) may be investments into products, services, segments or geographical markets and c) may be accomplished by methods as mergers, acquisitions, internal development, etc. (Booz et al., 1985). Even though this definition is broad, it fails to include process aspects of diversification and administrative linkages.

In this master thesis, diversification will be defined as the entry of a company or business unit into new lines of activity, by either using processes of acquisitions or internal business development, which calls for changes in administrative structures, systems or other management processes (Ramanujam & Varadarajan, 1989).

3.3 REASONS TO DIVERSIFY

Firms diversify to attain the benefits from having a broader product-market base (Reed & Luffman, 1986). However, if the firms operate under perfect market conditions, there will be no justification for diversification. A perfect market is in economics defined by several conditions, such as perfect market information, no interference by the government and no barriers to entry or exit etc., which together make up perfect competition (Hoskisson & Hitt, 1990). However, in the real world, a perfect market doesn't exist and this opens up for the opportunities of diversification.

The benefits of diversification vary widely throughout the literature. The reasons range from risk reduction, directional change, stabilized earnings, use of spare resources, adaption to customer needs, synergy gains and increased growth (Reed & Luffman, 1986; Reinsch Jr & Lynn, 1990). There are several streams of research regarding firm's benefits of diversification, with large disagreements about what the main benefits of diversification are. Economic studies have, on one hand, generally emphasized the market power effects of diversification, while financial studies have focused on the market efficiency arguments, and strategy studies have put emphasis on the extent to which benefits of synergy have been or can be translated into profitability (Lubatkin, 1983). The reasons that have been focused on within the different fields are connected to different advantages of diversification. Diversification may increase the company's market power, which can improve the profit, as diversified firms may use predatory pricing and reciprocal buying. Another benefit from diversification may be the increase of the company's flexibility in the capital market, as it can get capital from both inside and outside the company, and thus becoming more or at least equally as efficient as the external market. The benefit from diversification that is emphasized in strategy studies may come from exploiting synergies between business units.

Four main areas for why firms diversify have received particular emphasis in the literature; the general environment, the industry's competitive environment, specific characteristic of the companies themselves and their performance. There are however, disagreements in the

literature on what the major influences for diversification are.

General environment

Firms decisions are shaped by the general environment, as for instance the legal, political, economic, technological, social and ecological environment in which the firm operates in. Many authors claim that an uncertain environment will be one of the most important influences for why companies diversify. Hoskisson and Hitt (1990) argue that uncertainty of future cash flows will act as a major internal incentive for diversification. Further, Galbraith, Samuelson, Stiles and Merrill (1986) advocate that a company faced with an uncertain future environment, is more likely to diversify into other areas that are not dependent on each other, in order to get several feet to stand on and be better prepared for dealing with large changes in the environment. Gort (1962) on his side, argues the importance of other general environmental factors, like fast technological development, as he believes that industries that have complex and changing technologies are the most attractive diversification outlets.

Competitive environment

Other researchers posit that an industry's competitive environment will be more influential on the companies' choice to diversify. Christensen and Montgomery (1981) argue that firms located in markets which constrain their growth or profitability are the most likely candidates for diversification. This view is supported by Gort (1962) who claims that firms rather diversify than pursue further growth within their primary industries, because of limitations in their growth within the latter. The limits of growth may come from a low

rate of growth in primary industry demand or obstacles to faster growth in the sales of an individual producer in the market demand (Gort, 1962). Hoskisson and Hitt put the industry's growth rate in relation to other industries by proposing that if the expected growth rates are uncertain relative to other industries, diversification will increase (Hoskisson & Hitt, 1990).

Specific characteristic of the companies themselves

Different characteristics of the firms may heavily influence their decision to diversify, and several researchers believe that especially the management will affect the diversification decision. Amihud and Lev (1981) argue that regardless of the modes of diversification, manager-controlled firms are more diversified than owner-controlled firms. Hoskisson and Hitt (1990) explains this using agency theory, where the managers have other motives than the owners, as diversification provides an opportunity for increased compensation for the managers because compensation may come from a larger number of companies. Ownership is also considered a factor that is of high importance. Firms with diffuse owners may be receptive to more diversification, compared to companies with highly concentrated owners, as it is harder to control and monitor the management when the owners are many and dispersed (Hoskisson & Turk, 1990). Other firm characteristics are also elaborated on in the literature, as for instance, Dyl (1988) who claims that size and diversification is highly correlated, and the larger the firm, the more diversified it will be.

Performance

Furthermore, the companies' performance is emphasized in the literature as having great influence on the diversification decisions. However, there are differences in opinions within this topic as well. On one hand, Hoskisson and Hitt (1990) argue that high performing firms are less likely to diversify than low performing companies, as low performing companies seek diversification opportunities to turn around their performance. However, they point out that low performing companies are more likely to make riskier diversification choices and thus continue the low performance (Hoskisson & Hitt, 1990). Rumelt (1982) supports this theory and says that high performance eliminates the need for more diversification, hence making low performance an incentive for diversification. Burgelman (1983) also asserts that entry into new business areas are often stimulated by deteriorating performance in existing businesses. Miles and Cameron (1982) on the other hand, disagree and believe that a major factor for diversification is good past performance, as it may result in excess investible cash that could be used to diversify the company.

3.3.1 INTERNAL VERSUS EXTERNAL FACTORS

There are various reasons that come into play when companies choose to diversify. The literature shows that there are both internal and external causes in play, and the reasons for diversification elaborated on earlier can be placed into these two categories. The choice of altering the business portfolio and thereby changing the degree of diversification is therefore affected by both internal and external

factors. A company is faced with, to some extent, conflicting demands of market adaption and resource leveraging. There is a need for market adaption, as fit with the external market is a critical success factor for any company. However, there is also a need to leverage the resources that already have been invested in (de Wit & Meyer, 2010). This leads to two perspectives about which type of factor should have the greatest impact when entering or exiting a business area.

On one hand, some believe that a company should be opportunity driven and that external potential should be emphasized over internal potential when making a strategic decision. In other words, market is more important than the company's resources, and thus markets should lead and the company's resources follow (e.g. Porter, 1985). On the other hand, others believe that a company should be strength driven and that strategic decisions should be made with emphasis on the company's internal potential, like its resources, over the external potential in the market. Thus a company should develop a unique resource base, and afterwards find markets where these resources can be leveraged (e.g. Barney, 1991).

3.3.2 REASONS NOT TO DIVERSIFY

Out from the benefits presented, diversification may seem lucrative. However there are many authors that believe that there are several reasons not to diversify. In many cases, the benefits from diversification are exaggerated (Markides & Williamson, 1994) as diversified firms may encounter inefficiencies, which more focused firms will not. As firms grow

larger and more complex, the management's ability to efficiently control the company decreases. For instance, it will be more difficult to control aspects of distribution operations, such as inventory costs and sales force expenditures (Phillips, 1982). Further, diversified firms may encounter difficulties with coordinating operations and activities between different departments and divisions, compared to more focused companies. Other diseconomies of scale that can arise when diversifying are communication problems between the actors in the network and low motivation among the workers, which can lead to low productivity (Williamson, 1989).

Further, it may be difficult to realize the synergies of diversification. Even realizing part of the potential requires substantial effort of the firm, as the prizes of diversification are far from automatic and the implementation costs may be high (Reed & Luffman, 1986).

By diversifying, the resources are spread over several business areas, and it is argued that focusing the firm's limited resources on one or a few markets is better, as it enables the firm to bypass the competitors' assets and competences (Biolos, 1997). In this way a company can become a specialist in one field with a clear brand, instead of being diversified and possibly become a mediocre actor in several business areas with an unclear brand.

3.4 MODE OF DIVERSIFICATION

Another major theme within the diversification literature is the mode of diversification, which is the extent to

which a company relies on acquisitions compared to internal business development when diversifying. These two modes of diversification, internal-based growth and acquisition-based growth, are the two extremes in the literature, which have raised a debate. However, rising costs of internal development together with shorter product life cycles have made acquisition-based diversification more and more attractive to companies (Ramanujam & Varadarajan, 1989).

3.5 DIRECTION OF DIVERSIFICATION

Choosing to diversify can be looked upon as basically seeking ways to modify the business definition so to better satisfy some performance objectives. In the literature there are large disagreements about different types or directions of diversification, and which is most preferable for firms. A common distinction in the literature is between related and unrelated diversification. Diversification aimed at realizing technological and other synergies, is normally described as related diversification. Sometimes however, diversification is done to obtain vertical economies or economies related to allocating and securing financial resources. This is commonly named unrelated diversification, as it often represents entry into unrelated business areas. This topic is elaborated further in the next section, where the performance of diversification is covered.

3.6 PERFORMANCE AND DIVERSIFICATION

There is no unified theoretical perspective that explains the relationship between diversification and the firm's

performance. The consequences of corporate diversification on firm performance, have been studied for decades, but the findings are inconsistent and there are lack of both theoretical and empirical consensus regarding the diversification-performance linkage (Markides & Williamson, 1994; Palich, Cardinal, & Miller, 2000).

On one side, many researches have found no significant relationship between diversification and performance after controlling for factors, as for instance industry effects and prior performance (Christensen & Montgomery, 1981; Hill, 1983). One can thus not say anything about the superiority of diversified firms over focused single-business firms. On the other side, early literature on diversification proposed that performance is positively and linearly related with diversification, with the main arguments being based on market power advantages and internal market efficiencies (Gort, 1962). Following this view, firms that have a high degree of diversification, will do better than focused single-business firms and firms with a moderate degree of diversification. This is the case whether or not the new business areas are related to the existing business. This forms the basis for the linear model presented later in this chapter.

Due to inconsistencies in the empirical evidence with the linear model, alternative models have been adopted, where the focus is on the relatedness of the new business area. The centrepiece of relatedness theory is economies of scope. According to this theory, a firm can gain economies of scope when the cost of producing separate outputs surpasses the cost of joint

production (Panzar & Willig, 1981). These synergies can for example come from sharing of input factors across several products or businesses, making resource-related diversified firms more profitable than single-business firms (Bettis, 1981; Rumelt, 1982). Theoretically, some existing relatedness constructs focus on the relatedness of certain resources as product relatedness (Rumelt, 1982), manufacturing relatedness (John & Harrison, 1999) and technological relatedness (Silverman, 1999).

In this paper, the general definition of resource-relatedness will be used, which includes all the different types of resources, however the resources must be connected to the main competence in the firm, and not just to the support functions.

Numerous studies have found support that related diversification is better than none (Palich et al., 2000). However, the evidence from a substantial body of empirical research does not conclusively find that related diversification is superior to unrelated diversification (Gary, 2005), and there is considerable disagreement on how extended, unrelated diversification affects the performance (Palich et al., 2000). This gives rise to two additional, curvilinear models, namely the inverted U-model and the intermediate model.

3.6.1 THREE MODELS OF THE LINKAGE BETWEEN PERFORMANCE AND DIVERSIFICATION

Palich et al. (2000) synthesized findings and derived three models for diversification from three decades of research. The three models and the

rationale behind each of them are now presented.

The linear model

According to the linear model, as mentioned, diversification and performance is linearly and positively related. The two main arguments are based on market power advantages and internal market efficiencies.

Market power advantages can be created and exploited by diversified firms, with the use of a number of mechanisms that are unavailable to more focused companies (Gort, 1962). For instance, a diversified firm could use sustained price-cutting to drive existing players from the market and to discourage future entries, as the sustained losses could be funded from cross-subsidization from other business areas. The short term losses are in the longer run offset with gains from higher future prices, due to less competition (Saloner, 1987).

Internal market efficiencies are another argument supporting diversification. A single-business company can only extract capital externally, which often are more costly than extracting it from within a company. A diversified firm has more flexibility in capital and labour market, as it can both attract external funding and shift capital and other critical resources like labour, internally between business units in the portfolio (Meyer, Milgrom, & Roberts, 1992). Additionally, the top management of a diversified firm should be better equipped to optimize the allocation of the resources, compared to external markets, as they have superior access to information (Shleifer & Vishny,

1991). Another prominent advantage with diversification is the overall risk reduction that may come from combining businesses with different financial flows (Barney, 1997).

Taken together, market power advantages, internal market efficiencies and other advantages, suggests a linear and positive relationship with performance. The linear model is shown in Figure 2. However, empirical work have found little evidence for sustained price cutting, and there is not universal support for the argument of internal market efficiencies, as information asymmetries might be smaller today due to economical, technological and regulatory changes (Markides, 1992). Empirically, this model has not been given much support, leading to two alternative models.

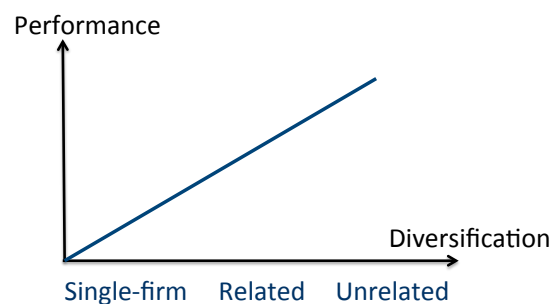


FIGURE 2: THE LINEAR MODEL

The inverted-U model

Economies of scope is the most common rationale for the superiority of related diversification (Markides & Williamson, 1994). As business units are related in some way, the units are able to share resources or otherwise boost revenues by bundling products and so on. Additionally, related firms may also enjoy learning curve effects and intra-firm product-process technology diffusion (Barney, 1997). In these ways related diversified firms should outperform focused firms.

However, the advocates of the inverted U-model, recognizes that at some point the benefits obtained from diversification would be associated with major costs. These costs could be control and effort losses, coordination costs and other diseconomies of scale related to organization and internal capital market inefficiencies (Markides, 1992). Out from this, one could conclude that firms will experience an optimal level of diversification, with decreasing performance in both directions, as the marginal cost of diversification increase rapidly at high levels of diversification (Palich et al., 2000).

Together these arguments amongst several, form the basis for the perception that related diversification is predominant, compared to no and unrelated diversification (Palich et al., 2000). The inverted-U model is shown in Figure 3.

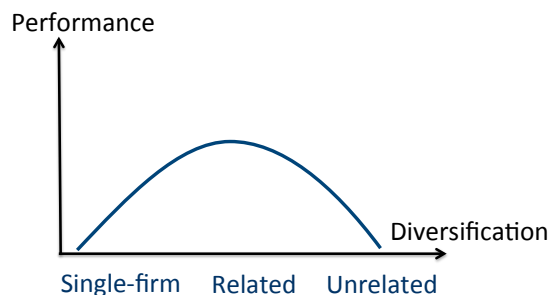


FIGURE 3: THE INVERTED-U MODEL

The intermediate model

The advocates of this model agree with the inverted-U model that related diversification is better than no diversification, however they have a different view on the relative performance of related versus unrelated diversification, as they believe they are somewhat equal.

The main argument is that related firms may not be able to fully exploit the relatedness of the business areas (Palich et al., 2000). This is by Markides and Williamson (1994) referred to as “exaggerated relatedness”, which suggests that looking at overall similarity between two areas, overstates the likelihood that a company will achieve superior performance by diversifying across the two. Further they argue that related diversifiers will only outperform unrelated diversifiers to the degree in which the company is able to exploit the relatedness to create and accumulate new strategic assets quicker and cheaper than their competitors. Simply amortizing from existing assets using economies of scope, will at best only give short term benefits (Markides & Williamson, 1994). Additionally to these concerns, Nayyar (1992) highlights that the cost of the activities needed to exploit the relatedness, like for instance cooperation between units, may exceed the benefits gained. Other hindrances to relatedness exploitation can be problems with allocating joint costs, incentive distortions coming from intra-firm competition and incompatible technologies (Nayyar, 1992). Further, unrelated diversification create unique benefits, mainly coming from financial synergies, like for instance reduction of industry risk (Barney, 1997).

The intermediate model can be tied to the notion that diversification can give positive, but diminishing returns beyond some optimal point, which is in line with Markides’ (1992) findings that the marginal benefits from diversification are best described by a decreasing function. To sum up, several researches conclude that related operations should outperform

unrelated operations (Markides, 1995; Rumelt, 1982). However, these perspectives do not take into account the hindrances to exploiting relatedness or the advantages only unrelated firms might have. Thus, based on theory alone, it is difficult to come to a definite conclusion of one diversification strategy over another (Seth, 1990). The intermediate model is presented below in Figure 4, and do not separate between related and unrelated diversification, but shows that the benefits of diversification will have positive, but diminishing returns.

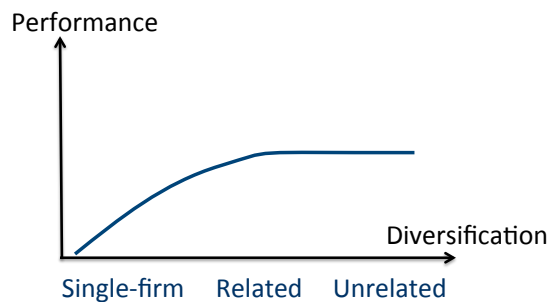


FIGURE 4: THE INTERMEDIATE MODEL

Final remarks on the three models

Several studies have found that unlimited diversification is not the best, as at one point the costs of high levels of diversification will outweigh the benefits (Denis, Denis, & Sarin, 1997). This makes the two curvilinear models more attractive than the linear model. Although some empirical evidence, seem to support the intermediate model over the inverted-U model (e.g. Bettis & Hall, 1982; Simmonds, 1990), this is not always the situation (e.g. Rumelt, 1982; Markides, 1992). Based on this, the disagreement concerning the diversification-performance linkage persist (Palich et al., 2000).

CHAPTER 4

PROPOSITIONS

In order to answer the research questions, propositions have been developed out from the theory and linked with the Norwegian power industry. Answering these propositions with an analysis of the industry can help us reach a conclusion of the research questions in this master thesis. First, two propositions about environmental uncertainty are presented, before four propositions regarding diversification are suggested. At last, a summary of the propositions will be presented with a preliminary answer to our research questions.

4.1 PROPOSITIONS ABOUT ENVIRONMENTAL UNCERTAINTY

4.1.1 PROPOSITION 1

Literature on environmental uncertainty, presented in Chapter 2, emphasizes that environmental uncertainty occurs when the decision-makers lack information about the future and that it increases when the uncertainty dimensions, called rate of change and complexity, increases. The Norwegian power industry is anticipating several rapid changes in many of their business areas, which can make the situation rather complex. Based on this it is believed that the industry is facing an uncertain environment. Out from this, proposition 1 is stated.

P1: The Norwegian power companies will experience high environmental uncertainty.

4.1.2 PROPOSITION 2

The theory states that to be able to match the company with the environment, when the environment is uncertain, strategic foresight can be used. Strategic foresight is used to describe the activities and processes a decision-maker applies to help decide the course for the future (Vecchiato, 2012b). As the theory on strategic foresight has received mixed blessings among researches, and earlier empirical evidence shows a varying degree of strategic foresight usage across industries, it is suggested that this will also be the case in the Norwegian power industry. Proposition 2 covers this aspect.

P2: It is expected to find a high degree of variations in the usage of strategic foresight activities among the actors in the Norwegian power industry.

4.2 PROPOSITIONS ABOUT DIVERSIFICATION

4.2.1 PROPOSITION 3

As seen from the theory presented in the previous chapter, there are disagreements about whether or not diversification is beneficial, or if for instance a focused strategy could be just as good. On one hand, a diversified strategy seeks to reap benefits from for instance risk reduction and synergies (Reed & Luffman, 1986), while a focused strategy aims to get benefits from bypassing the competitors'

competences (Biolos, 1997). There are different benefits that can be achieved by the two, and it can thus be suggested that different firms will value these benefits differently, creating a varying degree of diversification across an industry.

Further, theory suggests that companies with dispersed owners may be receptive to more diversification, compared to firms with highly concentrated owners (Hoskisson & Turk, 1990). As the ownership structure across an industry is likely to be varying, it is thus argued that this will further contribute to a varying degree of diversification in an industry. Based on this, proposition 3 is presented.

P3: The actors in the Norwegian power industry will have varying degrees of diversification.

4.2.2 PROPOSITION 4

The theory reveals several reasons that influence a firm's decision to diversify, where the general environment surrounding the company is one. Further, the theory suggests that an uncertain environment may lead to increased diversification among companies (Gort, 1962; Hoskisson & Hitt, 1990), and that companies facing an uncertain environment are more likely to diversify into unrelated areas, to get several feet to stand on (Galbraith et al., 1986). Based on this, actors in an industry facing an uncertain environment are likely to move towards more diversification and mainly in the unrelated direction. As the Norwegian power industry is suggested to face an uncertain future, proposition 4 is suggested.

P4: Among the actors in the Norwegian power industry there will be a development towards more diversification, and the diversification will mainly be in the unrelated direction.

4.2.3 PROPOSITION 5

Out from the theory presented earlier, it is clear that there are several factors affecting a company and its strategic decisions, and that these can on a general level, be divided into two; internal and external. There is to some extent conflicting demands between listening to the external factors and adapting to the market (Porter, 1985), and listening to the internal factors and leveraging the current resource base (Barney, 1991). Although these demands are conflicting, it is believed that a company will have to consider both and try to find a balance between the two. Therefore it is suggested that companies' choice of changing their diversification by entering and exiting business areas, will be affected by both internal and external factors. Proposition 5 is stated based on this.

P5: Both internal and external factors will influence the Norwegian power companies' choice of entering and exiting different business areas.

4.2.4 PROPOSITION 6

Based on the theory alone, it is difficult to predict which of the three diversification models could best describe the relationship between diversification and performance.

However, the linear model has received quite some criticism over a period of time and is thus a less likely candidate. Some empirical evidence seems to favour the intermediate model (Simmonds, 1990), and as firms in uncertain environments are suggested to benefit from unrelated diversification (Galbraith et al., 1986) it is proposed that the intermediate model will be suitable for the companies in the Norwegian power industry. This proposition is made regardless of the theoretical debate, in order to have a basis to work from. Out from this proposition 6 is stated.

P6: There is no difference in performance between diversifying in the related or the unrelated direction among the actors in the Norwegian power industry.

4.3 SUMMARY OF PROPOSITIONS

Throughout this chapter we have presented six propositions, which were made to help us answer our research questions. We will in this section give a preliminary answer to our research questions based on the propositions, followed by an illustration that summarizes and shows the relationships between the propositions.

RQ1: In what way does the diversification among the actors in the Norwegian power industry change when faced with an uncertain future?

Propositions 3, 4 and 6 and indirectly proposition 1 and 2 have been made to help us answer RQ1. Based on the

argumentation leading up to propositions 3 and 4, our preliminary conclusion on RQ1 is that the companies in the Norwegian power industry will have a great variation in the degree of diversification, and that diversification will increase in light of an uncertain future, where the increase mainly will be in the unrelated direction. Further, based on proposition 6, it is believed that in the Norwegian power industry, both related and unrelated diversification will be favourable compared to no diversification, as they face an uncertain future.

RQ2: Why have the companies in the Norwegian power industry entered and exited different business areas?

Proposition 5 and indirectly propositions 1 and 3 have been made to help us answer RQ2. Based on the argumentation for proposition 5 the companies are influenced by both internal and external factors when they enter and exit different business areas. Proposition 1 suggests that the future environment will be very uncertain, and this external factor can thus be an important influence on the choices made by the companies. Lastly, in proposition 3 we suggest that the diversification in the industry is varying, and it is therefore also reasonable to believe that the reasons for diversification, in other words the factors, are varying as well.

The illustration in Figure 5 shows the relationships between the propositions and the research questions.

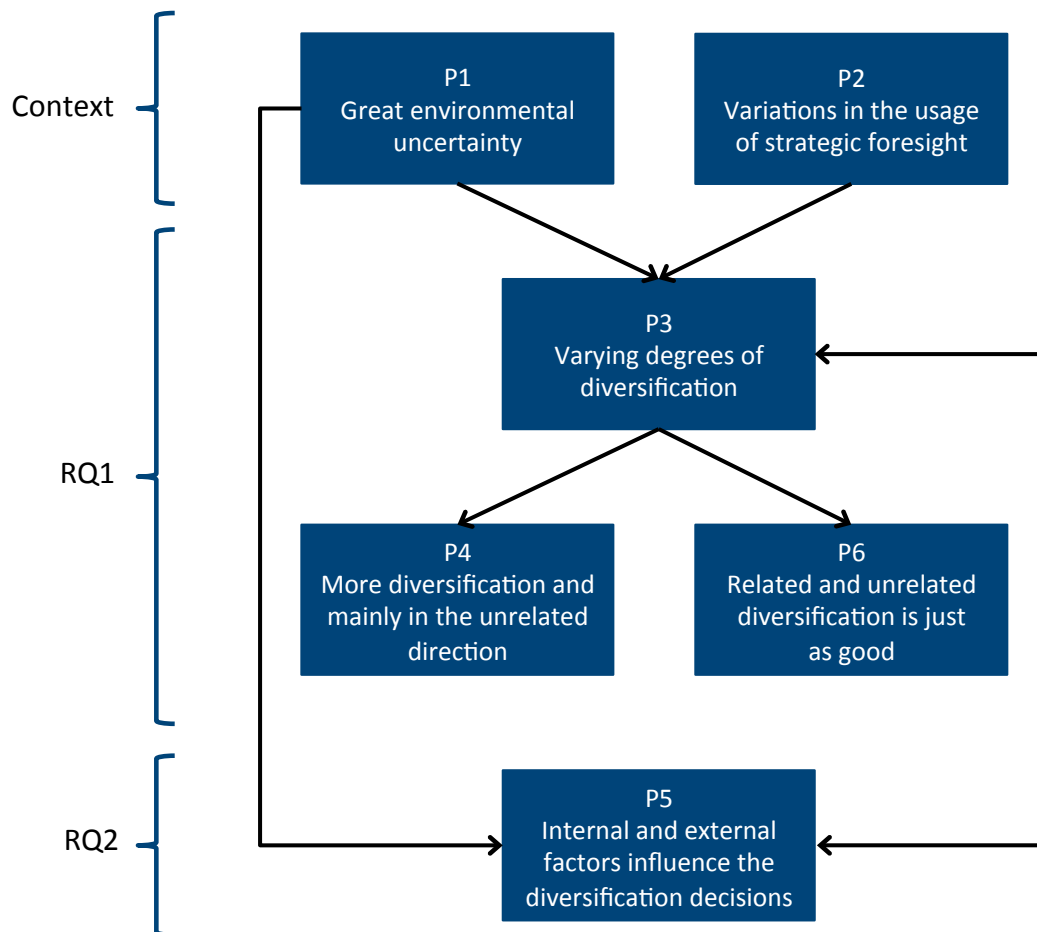


FIGURE 5: RELATIONSHIP BETWEEN PROPOSITIONS AND RESEARCH QUESTIONS

METHODOLOGY

METHODOLOGY

The following chapter presents the methodology used in our research. First we will cover the research strategy and design, followed by the research method, before we show how the cases were selected and how we built the theoretical foundation. Next the data collection through written sources and interviews will be presented.

Further, we will go through how we analysed the data, before we end with the evaluation of the research quality. Figure 6 shows our research process. The research process is however an iterative process and not as linear as the figure might indicate.

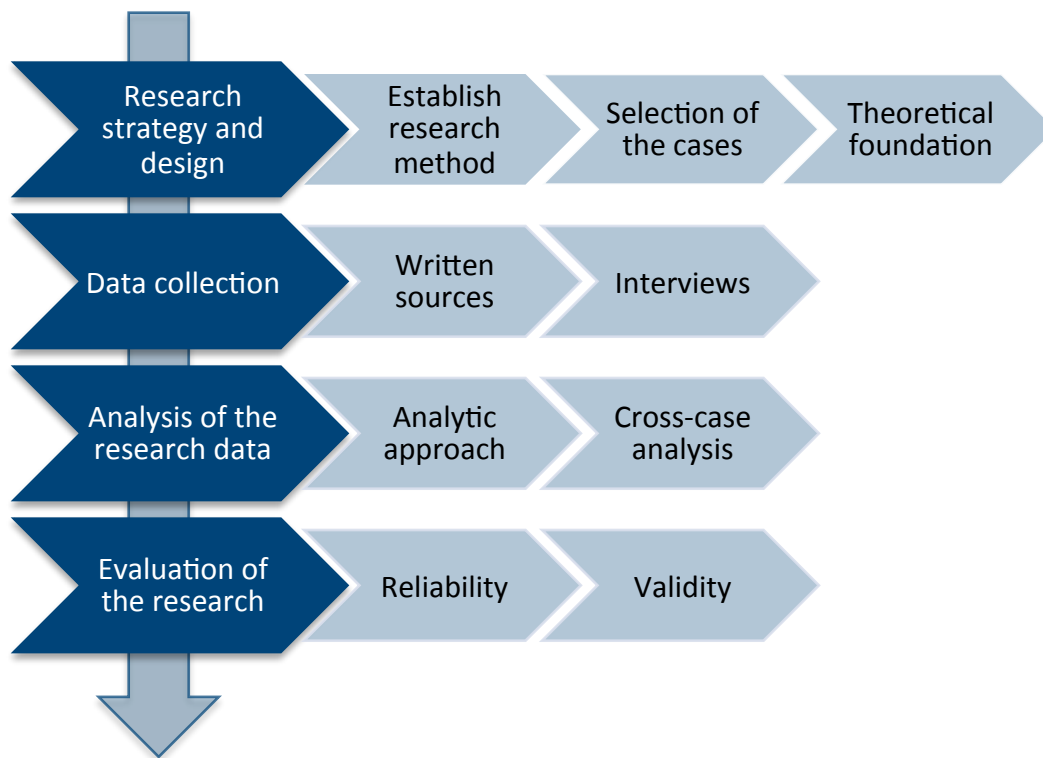


FIGURE 6: THE RESEARCH PROCESS

5.1 RESEARCH STRATEGY AND DESIGN

To answer our research questions in the best way, a qualitative case study was selected. The nature of our research questions led to the decision of using a qualitative strategy, as there are many different variables to take into consideration, and a qualitative method can be used to better understand an unknown

area (Strauss & Corbin, 1990). Additionally, qualitative data are often rich and holistic, and have a strong potential for revealing complex situations (M. B. Miles & Huberman, 1994). Further, we found case study to be a suitable research design, because we wanted a more detailed and up-close examination of the situation, while at the same time being able to consider the contextual conditions. This is supported by

Yin (2014) who argues that the case study is favourable when the research requires an extensive and in-depth description of a contemporary event.

Further we decided on a comparative design and found multiple case study to be most relevant to answer our research questions. A comparative design allows the characteristics of several cases to be a stepping stone for theoretical reflections of the contrasts in the findings (Bryman & Bell, 2011). A multiple case study therefore enables us to explore differences and similarities between cases. The evidence from multiple case studies is often considered more robust than a single case study (Herriott & Firestone, 1983). To analyse the cases we decided on a cross-case analysis to be able to compare and detect issues that involved all the cases.

5.1.1 ESTABLISH RESEARCH METHOD

After defining the research questions, a research method was chosen. Our first research question is of a descriptive nature, as we strive to study the characteristics of the diversification situation in the Norwegian power industry. Our second research question is in turn, explanatory of nature, as we seek to explain and understand why the companies have entered and exited business areas, by looking at the factors that have influenced them to do so. However, we don't know which factors we should look for before we investigate the companies as there has been little research in this field, thus the study has some exploratory characteristics as well. The research methods we chose to collect the data were semi-structured interviews and examination of documents

and archival records, which are all elaborated on in Section 5.2.

5.1.2 SELECTION OF THE CASES

The selection process started with a list from the Norwegian Water Resource and Energy Directorate (NVE) that contained the names and the results of all the companies in the Norwegian power industry from 2004-2012 (NVE, 2014). In total, the list contained 382 companies. This list was used as a basis for selecting companies to study further. We chose to use purposive sampling, where we sampled the cases in a strategic way so that final selection was relevant to our research questions (Bryman, 2012). By using purposive sampling, we made sure that there was a good deal of variety in the resulting sample and that the members in the sample differed from each other in terms of important characteristics. In order to choose companies that would be suitable for our study, we refined the list using several criteria. The first criterion was that the companies should have both power distribution activities and hydropower production operations, thus being vertically integrated and having a broader view on the industry. The second criterion was that the companies should still be in business today. A third and last criterion was that the companies had to produce power for other than themselves. After these three preliminary criteria, we were left with 76 companies.

We looked closer into the 76 different companies, in order to be able to select a heterogeneous sample with a wide range. As we were interested in finding out why the companies have diversified their

portfolio, we sought to have sample groups with different degrees of diversification in order to get a heterogeneous sample where all outcomes and opinions were represented. We established three groups based on the diversification outside the three main business areas in the industry, which are hydropower production, power distribution and power sales. The groups were as follows:

- Group A: Companies that have three or more business areas outside the three main business areas
- Group B: Companies that have two business areas outside the three main business areas
- Group C: Companies that have one or no business areas outside the three main business areas

To be able to sort the companies into the three groups we needed to define what would count as a separate business area. We researched all the 76 companies and found out what kind of areas they had business in. We sorted the businesses into business areas and projects. A criterion we quickly found to distinguish business areas from projects and investments, was that a business area needed to be more than just a financial investment.

We defined seven groups of business areas:

1. Electrical installation
2. Gas
3. Fibre
4. Smart house
5. Wind
6. Heat
7. Other

After dividing all the different business areas into the seven groups, the companies were sorted into group A, B and C. 19 companies were placed in Group A, 23 in Group B and 34 in Group C. Given our time and capacity constraints, we concluded that we only had time for 15 interviews. We wanted to distribute the interviews evenly between the three groups, as we wanted to focus on the heterogeneity and the variations, and make sure that the different outcomes were presented. Thus in this thesis, we have five sample companies from each group.

When choosing the sample companies we wanted to have a heterogeneous selection with regards to the following characteristics:

- Grid customer base
- Production volume
- Number of employees
- Geographical location
- Ownership
- Business areas

In Figure 7 the samples are illustrated and as seen, the variance is evident. Group A is represented by red, group B is represented by blue and group C is represented by green. The sizes of the coloured circles reflect the size of the company in terms of number of employees.

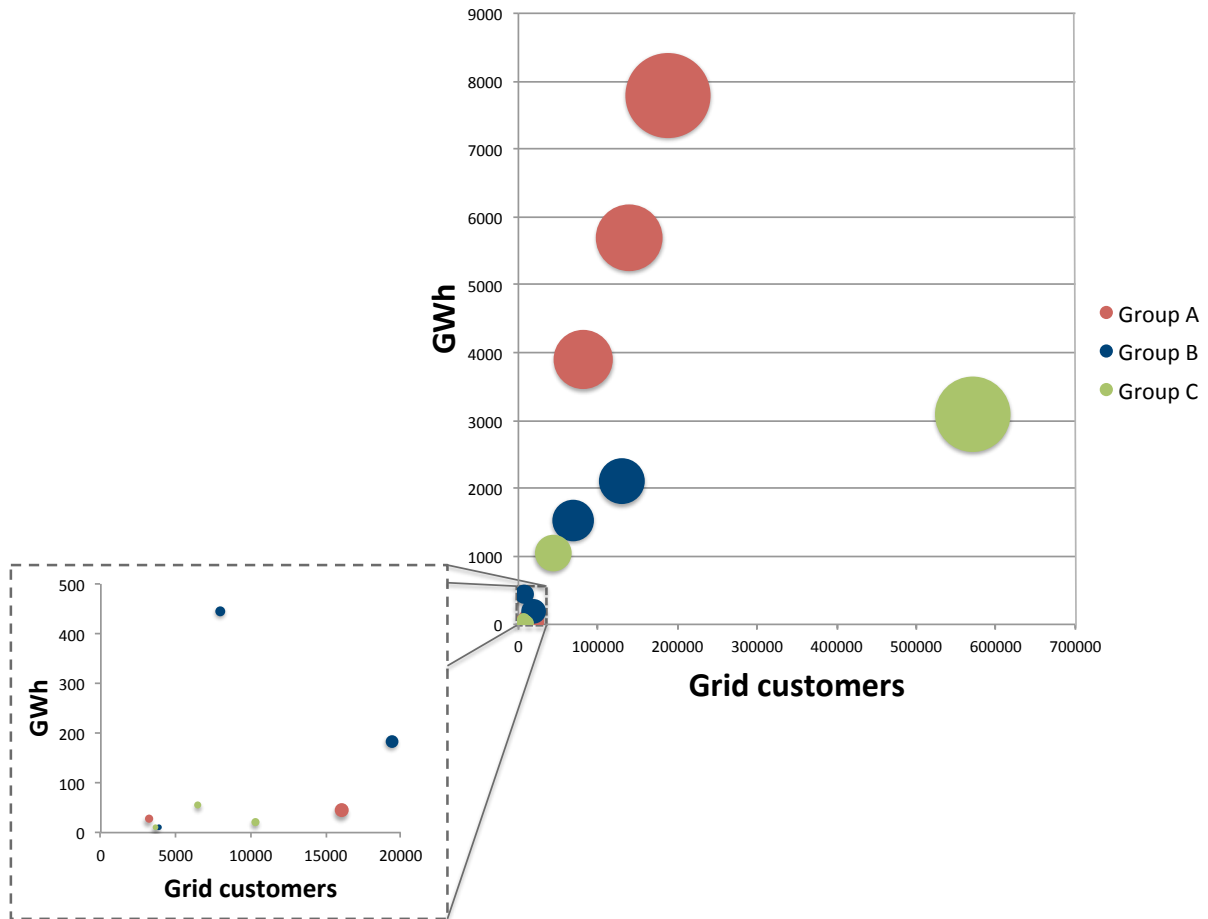


FIGURE 7: SPREAD OF THE CASE COMPANIES

5.1.3 DEVELOPMENT OF THEORETICAL FOUNDATION

A theoretical foundation was built in order to have a frame to base our work on. We were interested in finding out how companies strategically approach an uncertain future. The topic is rather comprehensive, and we thus decided to focus on some parts of a company's strategy. The composition of a company's business portfolio is an important part of their strategy and we thus chose to look further into it by looking at the company's diversification. In order to say anything about the companies' diversification when faced with an uncertain future, we needed to build a thorough theoretical foundation regarding both environmental uncertainty

and diversification, with emphasis on the latter.

To get a thorough understanding of the topic of diversification and environmental uncertainty, we performed several broad literature searches. The literature searches were executed in the databases Scopus Elsevier and Web of Science, in addition to Google Scholar's search engine. Based on the articles obtained from the literature searches we built further on the theoretical foundation by using at the references in the articles. By searching for articles and then using the articles that had been referenced in these, we ensured that the width and depth of the theory were represented in our thesis.

5.2 DATA COLLECTION

In this section we will present the sources of evidence used in this case study. When collecting evidence for our case study we decided to use three sources of evidence; archival records, documents and interviews, where interviews were our main source. The written sources are first presented, followed by a presentation of how we planned and conducted the interviews.

5.2.1 WRITTEN SOURCES

We collected information about the industry and the case companies through both documentation and archival records, in addition to the interviews. The information gained from the written sources has been used to build the industry review, as well as complementing the information received from the interviews. The documentation came from several sources; news articles, annual reports, government sites, official reports, etc. Using several sources is supported by Yin (2014) who enhances the importance of using multiple sources of evidence when conducting a case study. By collecting data from different sources, we were able to compare the results and secure the credibility (Bryman & Bell, 2011). Documents and records have not been requested by the researchers, but are “out there”, waiting to be analysed. This makes them less marked by our research (Bryman & Bell, 2011). However, it is important to read the documents and records critically and we therefore looked at Scott’s (1990) four criteria for assessing the quality of the documents and tried to follow these when evaluating the written sources found. The criteria are as follows:

1. *Authenticity*: The evidence should be genuine and of unquestionable origin.
2. *Credibility*: The evidence should be free from error and distortion.
3. *Representativeness*: The evidence should be typical of its kind, and if not, the extent of its untypicality should be known.
4. *Meaning*: The evidence should be clear and comprehensible.

We have collected a lot of the data for the industry review from NVE’s web pages. We have also used the governmental databases to search for laws, regulations and other governmental documents. News articles and magazines like *Teknisk Ukeblad* have also been used to get an understanding of the industry and the case companies. By collecting data from several sources, it was easier to evaluate the objectivity and credibility of the sources. To secure objectivity when there were discrepancies, official governmental sources were preferred over news articles and company specific documents.

After selecting the 15 case companies, we started building the cases. A case log of every company was made before we began the work with the interviews. We did this to learn about the case companies and get an understanding of their background and their current situation. The main sources we used were the company’s web page and annual reports from several years. News articles were also used if the information were relevant. The case logs gave us a thorough understanding of the companies before we interviewed them. Further the case logs were also used to increase the

reliability and enable other researchers to go through and replicate our research.

5.2.2 INTERVIEWS

We used interviews as our main source of evidence in the case study, as interviews are a good source of evidence when little is already known about the subject (Bryman & Bell, 2011). Interviews also enable us to gain more detailed information about each one of the case companies. We decided to conduct semi-structured interviews in order to obtain reasonably comparable information from the companies, but still open up for ideas and explanations for why companies diversify, without leading them to the answers. Semi-structured interviews are characterized by some fairly specific topics that need to be covered during the interview, usually represented by an interview guide, but the interviewee has great freedom in how he wants to reply (Bryman & Bell, 2011). Another possibility for us could have been to conduct more structured interviews to get data that would be easier to compare. However, we wanted to have the opportunity to explore new areas and ideas we didn't think of beforehand.

We wanted to interview the CEOs of the companies, as the future changes in the industry will affect the entire company and the CEOs will have a good overview of the companies' businesses and strategy. It is a possibility that others inside the companies would have been more knowledgeable on the subject, however we believe that interviewing the CEOs was best for this study, as we were interested in the strategic decisions made at the manager level.

Planning the interviews

We decided to conduct the interviews over the phone, due to the time constraints. We established contact with the CEOs by calling them directly on the telephone to introduce our project and ourselves. If they didn't respond, we tried calling again later the same day, and if no contact were established after the two calls, we sent an SMS asking if they had time for a short conversation at a suitable time. Doing this, we were able to talk to all the CEOs from the selected case companies. After the initial contact, we sent them an email with information about our research and gave them the opportunity to decide if they wanted to participate. All the CEOs from the fifteen companies wanted to participate and we were able to schedule all the interviews in the same week, 23rd-29th March 2015. However, one of the interviewees had double-booked himself and a few minutes before the interview was scheduled to take place, he uttered a wish to postpone the interview. This interview was carried out two weeks later on the 7th of April.

Interview guide

We made an interview guide to make sure we were getting comparable information from the 15 interviews. To be able to answer our research questions we needed to make sure we made an interview guide that led the interviewees onto topics that were relevant for the case study, but weren't leading. We also made sure that the conversation would flow naturally and open up for new themes, which is considered important (Bryman & Bell, 2011). We made a draft of the interview guide, before we had a workshop with one

of our supervisors, letting her check and evaluate the guide to reduce the risk of the interviewees interpreting the questions in a wrong way. The interview guide, shown in Appendix 1, was roughly divided into two parts; one about the past and previous choices and one about how they envision their company in the future.

Conducting the interviews

The 15 interviews were conducted over the phone, as we found it to be the most practical solution due to the time and budget constraints. By conducting the interview using a phone, we weren't able to see the interviewees' body language, face expressions and so on. However, the phone interviews worked well and we found it, considering the limitations, to be a good method to collect our empirical evidence. Each interview lasted approximately 30 minutes. We were both present during all the interviews and we conducted the interviews together. The phone was on speaker so the interviewee was able to hear us both. All the interviews were recorded to increase the reliability of the study and provide a more accurate rendition of the interviews. Since we didn't need to write everything down during the interviews, we could focus entirely on the informants, which made the conversations more dynamic and informal. This also gave us the opportunity to take our time and make sure that the interviewee had understood and interpreted the questions correctly.

After the interviews were conducted we worked through the recordings and wrote transcriptions of all the interviews. The transcription process was very time consuming, but it gave us an opportunity to

examine the answers more carefully and repeatedly. It also increased the reliability and helped us in the next phase of analysing the information. The advantages of transcribing and recording the interviews are also emphasized by Heritage (1984), who in addition mentions that transcribing can help correct the limitations of our memory and enable other researchers of examining the data. The transcribing of the interviews also enables usage of the data in other ways than we have.

5.3 ANALYSIS OF THE RESEARCH DATA

Most of the data we collected were through interviews and the transcripts from the interviews were unstructured and not easy to analyse the way it was. Although Bryman and Bell (2011) say there are few well-established rules for analysis of qualitative data, there are methods and approaches that can help make the data ready for analysis. This subchapter will present the approach we used to process and analyse the data collected.

5.3.1 ANALYTIC APPROACH

Our method for analysing the research data is shown in Figure 8. After finishing the transcription we sought to get familiar with the transcripts by reading them carefully and taking notes of initial comments and ideas. Further we created initial codes, by systematically coding all the transcripts. We worked independently on the coding and compared the data obtained from the interviews separately, without discussing the findings. We wanted to work individually first, to not be affected by the other's interpretations.

In the next step of the process we compared the coding to check if we had interpreted the transcriptions in the same way. After our initial coding and comparing, we chose to use an analytic method that is similar to thematic analysis (Rapley, 2011). We searched for themes by sorting similar codes into potential themes. In this way our individual coding were combined and checked. The next thing we did was to review the themes. We checked how the themes worked in relation to the entire data set, and looked for examples that did not fit the themes. Further, we refined the themes by determining the

limits of the themes, and the linkages and possible associations between them.

This analytic approach was especially evident when interpreting and mapping the various factors influencing the diversification decisions among the case companies. We coded the various explanations for entering and exiting business areas, and sorted the similar codes into factors. The factors were reviewed and refined and we ended up with ten different factors that were used in further analysis.

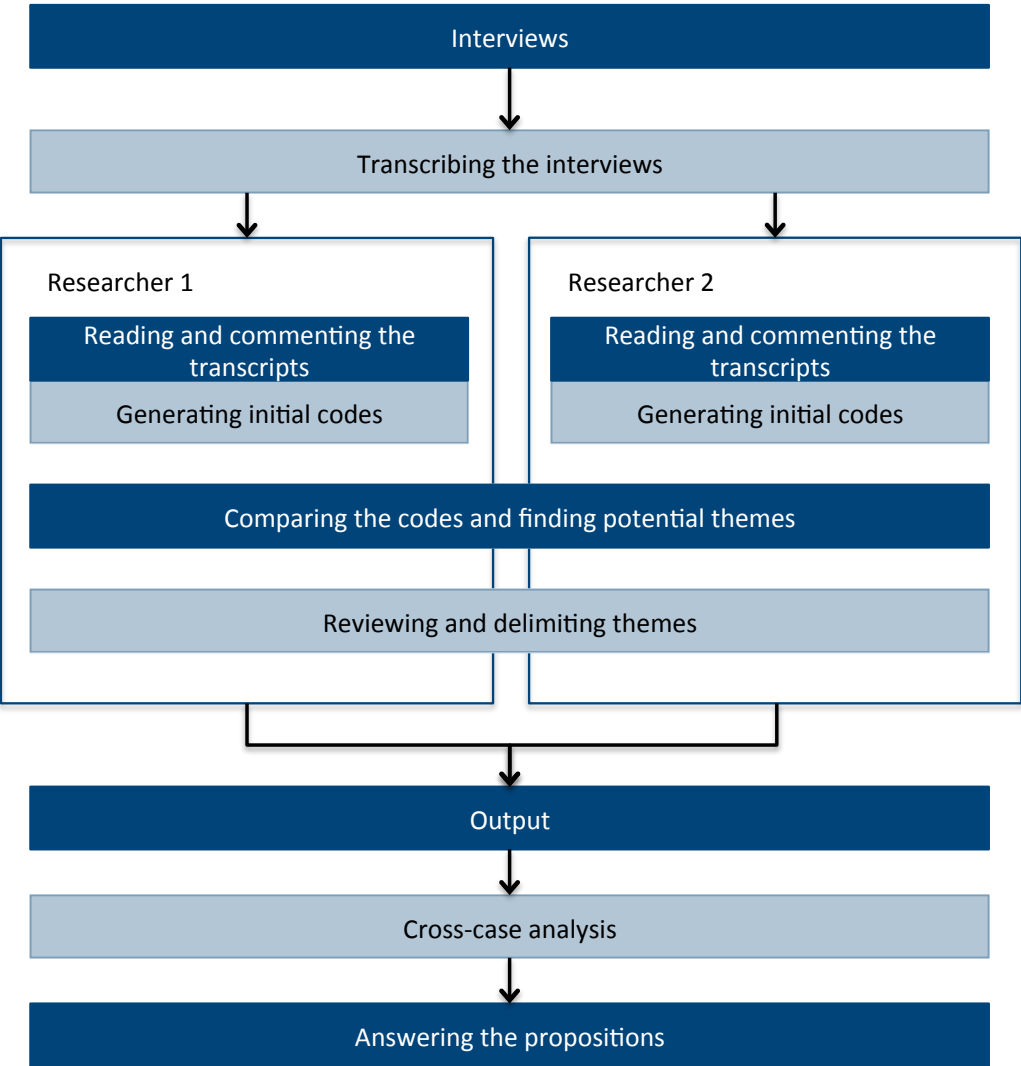


FIGURE 8: METHOD FOR ANALYSING RESEARCH DATA

5.3.2 CROSS-CASE ANALYSIS

To analyse the cases we decided to perform a cross-case analysis, as we wanted to reveal themes and conditions that involved all the cases and detect similarities and differences across the case companies. The decision to use cross-case analysis is supported by M. B. Miles and Huberman (1994) who argue that cross-case analysis will enhance the generalizability of the data and deepen the understanding and explanation of the themes. This is because multiple cases can form more general categories of how conditions may be related and not just show the conditions under which a finding occurs.

Before we started on the cross-case analysis we made sure that we had a thorough understanding of each of the case companies, to be well prepared to conduct the cross-case analysis. The individual case studies are presented in Chapter 7. This is supported by M. B. Miles and Huberman (1994) who enhance the importance of being familiarized with each of the cases before comparing them to avoid losing important characteristics in the process.

When we conducted the cross-case analysis, we compared the cases and looked for connections and relationships across the cases and across themes. We searched for overall trends, commonalities and variations, as well as other connections and relations. For instance, we looked for connections between diversification and company characteristics, and between diversification and strategic foresighting activities.

Further to help us answer our propositions we used pattern matching, which Yin (2014) explains as comparing the patterns from the findings with the propositions we made before we collected the data. By comparing the observed pattern with the expected pattern, propositions will be either confirmed or rejected. If observations indicate that the patterns match, the proposition will be confirmed and if it doesn't match, the proposition will be rejected (Dul & Hak, 2008).

5.4 EVALUATION OF THE RESEARCH

Validity and *reliability* are important criteria to judge whether the quality of the research is good. This is consistent with Yin's (2014) literature, which states that in a study with good quality, later researchers should be able to follow a similar method and arrive at the same findings and conclusions. In this section we will evaluate our research and present the elements affecting the quality.

5.4.1 RELIABILITY

Reliability can, according to LeCompte and Goetz (1982), be divided into internal and external reliability. Internal reliability is whether the researchers agree on what they see or hear. In this study we recorded all the interviews we conducted and saved all the documents we have been using, so if there were a disagreement we could just take a closer look at the transcripts or documents. We believe that this increased the internal reliability of our research.

External reliability, on the other hand, is whether the study can be replicated. To replicate a qualitative study may be

difficult because the circumstances may have changed since the initial study was conducted. Guba and Lincoln (1994) have introduced some alternative criteria for evaluating qualitative research, where *dependability* is the alternative for reliability. Both Yin (2014) and Guba and Lincoln (1994) emphasize that to have a reliable/dependable research, you must keep records of all the phases of the research process. We have been extra careful to document all the data we have collected through interviews and documents. We also explained the thorough selection process of the cases.

To further ensure external reliability, we described all the steps we have performed in our research, as proposed by Yin (2014). However, the interviews, due to the semi-structured nature, which can be subjectively influenced, may be hard to replicate. Regardless, the interview guide can be found in Appendix 1 and the methods on how we planned and conducted the interviews are described in this chapter, so if a later researcher use these methods, we believe that the empirical evidence may be somewhat similar. Considering all the different measure we have taken, the dependability of the research should be good. However, as the research is of the present situation, which evolves over time, it will be hard to precisely replicate our research.

5.4.2 VALIDITY

Validity is whether the measure of a concept in fact measures that concept in a fair way. The results and the conclusions of a study depend on the validity of the research conducted. There are several different types of validity; *construct*

validity, *internal validity* and *external validity* (Yin, 2014).

Construct validity identifies correct measures for the concepts being studied and using multiple sources of evidence and maintaining a chain of evidence are tactics to increase the construct validity (Yin, 2014). We have used several sources of evidence in this research, including interviews with 15 CEOs, documents and archival records. The chain of evidence is believed to be good because we have documented everything in a database with all the case logs and transcriptions. The case studies in Chapter 7 will also help the readers see the chain of evidence and ensure construct validity. By using triangulation, which involves using several sources of evidence in the study (Yin, 2014), and that the chain of evidence is adequate, we are confident that the construct validity of this research is satisfactory.

Internal validity refers to whether or not there is a good match between the theory that arises from the research and the researcher's observation (Bryman & Bell, 2011). General trends between the cases have been found, through cross-case analysis and pattern matching, which strengthens the internal validity (Yin, 2014). An alternative measurement to internal validity, is according to Guba and Lincoln (1994), *credibility*. The credibility of the findings includes both carrying out research according to good practice and making sure that the respondent validation is secured, by getting a confirmation about the data and that it is correct. If we were uncertain about what the interviewees had meant or if they had understood us correctly, we called them up again to get a

confirmation of the responses and make sure that we had interpreted the questions similarly.

External validity refers to the degree the findings of a study can be generalized beyond the study itself, which according to LeCompte and Goetz (1982) is difficult for many qualitative researchers because they often conduct case studies or select small samples. This, immediately inflict some limitations for our study, as we have studied actors in a specific industry, which limits the generalizability across studies. Other industries may have other characteristics and discoveries may evolve

differently. The alternative to external validity, according to Guba and Lincoln (1994), is *transferability*. Qualitative research often deal with a phenomenon in depth and not width, so the findings will therefore be connected to the uniqueness of the aspect being studied (Bryman & Bell, 2011). Qualitative researchers should therefore use what Geertz (1973) calls *thick description*, rich amounts of details about the object of study. We have made a thorough industry review and good case descriptions that will help later researchers interpret the situation and aspects of the study, which increases our transferability.

EMPIRICAL FINDINGS

CHAPTER 6

INDUSTRY REVIEW

To get an understanding of the Norwegian power industry, this chapter presents relevant background information. First, we present the historical development, before we show the value chain and the main business areas. Finally, the current trends in the industry are presented.

6.1 HISTORICAL DEVELOPMENT

The following section gives a brief introduction to the late history of the Norwegian power industry. First the restructuring of the industry during the 1990s is presented, before the development in organization of the industry is briefly mentioned.

6.1.1 RESTRUCTURING

The Norwegian power industry is a traditional and regulated industry, and has gone through only small changes the last decades. The biggest change has been the restructuring of the power sales segment. The Norwegian Energy Act of June 1990 introduced a restructuring of the Norwegian power industry, where the main motive was to open up the Norwegian market and create a competitive electricity market. The Norwegian government was a pioneer in the Nordic region to initiate liberalization of the power system and power market (Wangenstein, 2012). Basically, the developments in the 1990s following the Norwegian Energy Act resulted in a power market exposed to competition, and the right for each

consumer to choose its own power supplier. In 1996, a joint Norwegian-Swedish power exchange was established, called Nord-Pool Spot (Nord Pool Spot, 2015), making the power market even closer to a free market.

One of the most important structures coming from the restructuring is the clear separation of monopolistic operations, related to power transmission, from competitive operations like power sales and power production. This is to hinder unfortunate cross subsidizing between the two types of operations. Today, some of the largest companies in the industry are required by law to have both functional and corporately separation between their monopolistic and competitive operations (Energiloven, 1990). There are however, major discussions about broadening the law to include more of the companies and about how the industry should be organized in the future. This will be elaborated under Section 6.3.3.

6.1.2 ORGANIZATION OF THE INDUSTRY

The Norwegian reform did not include any changes of ownership, which have been the outcome of restructuring in other countries (Wangenstein, 2012). Public (State, county and municipality) ownership has dominated the Norwegian power industry, both before and after the reform. The municipalities and counties own about 50% of the production capacity in Norway, while the State, through Statkraft SF owns 37% and private companies own around

13%. The State owns most of the central grid, while municipalities and counties own most of both the regional grid and distribution grid (Ministry of Petroleum and Energy, 2005).

During the last fifteen years, there has been some integration in the industry. However, there are still a large number of market actors throughout the industry's value chain, which is positive to competition (Wangensteen, 2012). There are 328 companies that are registered with a trading license, which is necessary for everyone that wishes to distribute or trade power. There are 165 companies involved in power production and 173 companies that have distribution activities on one or more levels. The power sales segment, is the largest in terms of actors, as there are 226 power sales companies (Ministry of Petroleum and Energy, 2005). As, can be seen from Figure 9 below, there are 128 vertically integrated companies. A vertically integrated company in this industry has both activities exposed to competition (power production and/or power sales) and monopolistic distribution activities.

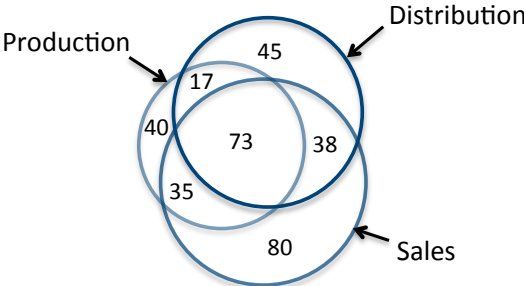


FIGURE 9: COMPANIES IN THE INDUSTRY

6.2 VALUE CHAIN OF THE NORWEGIAN POWER INDUSTRY

In order to easier understand the dynamics of the Norwegian power industry, a presentation of the industry's value chain with actors and main activities is thus appropriate.

6.2.1 MAIN BUSINESS AREAS

To easier understand the companies in the Norwegian power industry, the main business areas for the actors are elaborated. In addition, other business areas that are widespread in the industry are briefly mentioned.

The value chain of the Norwegian power industry can be simplified as shown in Figure 10, with the three main business areas being power production, power distribution and power sales.

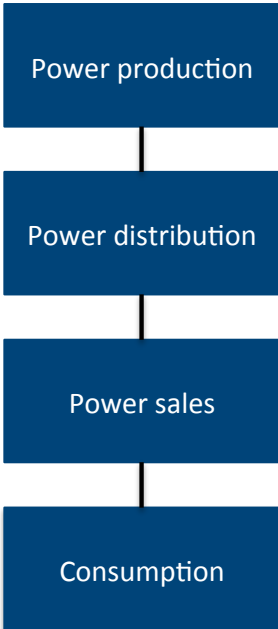


FIGURE 10: VALUE CHAIN OF THE NORWEGIAN POWER INDUSTRY

Power production

In Norway, 96,7 % of all electricity power production comes from hydropower, and NVE regulates the production heavily through power production licenses. Norway is Europe's largest and the world's seventh-largest hydropower producer, with a yearly mean production of 131,4 TWh (NVE, 2013a, 2015e). Among the companies in the industry, there are big differences in production, as for instance in our sample, the companies' normal production range from 2,5-7800 GWh.

60% of Norway's hydropower potential is developed, and the development has slowed down, as the most profitable areas are built out, and over 61% of the remaining potential is protected (NVE, 2015e). For some companies, the limited growth opportunities in traditional hydropower production might have prompted growth into other areas, as for example wind power.

Power distribution

The electricity grid is a natural monopoly. Average costs per unit transported decreases with increasing utilization of the grid, until the capacity starts to become pressured. It will therefore be costly for the society to have multiple parallel networks, and as a result it is not opened for competition within the grid operations. This is one of the reasons why the grid operations are heavily regulated and the responsibility is divided between the energy authorities with NVE as the regulatory authority, the TSO Statnett and the distribution companies (St.meld. nr.14 2011-2012, 2012).

The Norwegian electricity grid consists of three levels: the central grid, the regional grid and the distribution grid. The central grid is the highways of the power system and is owned and operated by the TSO. It has a high transmission capacity and connects producers and consumers in different parts of the country with each other. It also includes transmission lines abroad. The regional grid is the link between the central grid and distribution grid, and mainly companies who have construction concession operate this grid. The distribution grid is the local grids, and is mainly operated by area concessionaires. It ensures distribution of electricity to the end customers, like households, the service sector and industries (NVE, 2015c).

As the electricity grid is a natural monopoly the incomes from tariffs is strictly regulated by NVE. The purpose of the regulation is to promote socio-economic and efficient operation and development of the grid (Ministry of Petroleum and Energy, 2015). The grid companies can only increase their profits by having an efficient grid and keeping the costs down. When the electricity comes into the grid and goes out, there are tariffs involved.

Power sales

Anyone can sell electrical power, as there are no restrictions present on sales and supply of electrical power. The power sales market is therefore subject to free market competition. This area has traditionally not been considered very profitable, unless the customer base is big, as the margins are low due to high competition. Power is a commodity, so the power suppliers must differentiate themselves in other ways, as

for instance on price, service or local presence. The industry with its cash flow is illustrated in Figure 11.

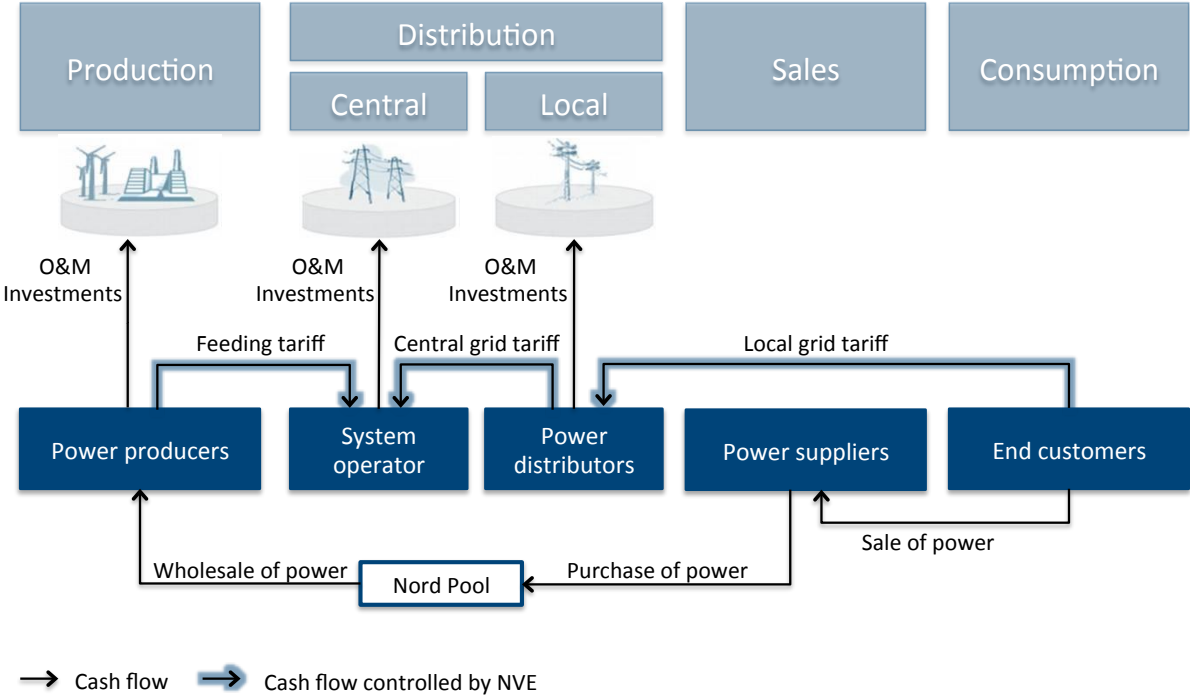


FIGURE 11: CASH FLOWS IN THE INDUSTRY

Other business areas

Traditionally, there have been differences in which areas the companies in the industry differentiate themselves into, but some business areas have been more popular than others. Electrical installation in private homes and commercial buildings has been a business area adopted by many. This might be due to the fact that the company already has employees with knowledge about operating the power grid, which may be considered related to

electrical installation. Another area that has had growing interest among the industry players the last fifteen years is fibre, and many companies have expanded their business portfolio by including this business area.

6.2.2 INDUSTRY ACTORS

The main actors in the power industry and their responsibilities are presented in Table 1.

TABLE 1: ACTORS IN THE INDUSTRY

Industry actors	Examples	Description
Regulators	NVE, The Norwegian Competition Authority	<p>The main regulator in this industry is the Norwegian Water Resource and Energy Directorate (NVE). NVE is responsible for the monopolistic activities, and ensures that the grid is available for any market actor without discrimination and under equal conditions. In addition they control the grid companies' tariffs and revenues.</p> <p>The Norwegian Competition Authority controls the competitive activity in the industry, and their objective is to ensure good market conditions by trying to avoid collusive behaviour and control and limit merges and acquisitions.</p>
Producers	Statkraft, E-Co, Agder Energi	These companies are responsible for the generation of power, and for selling it on the power exchange Nord Pool Spot.
Distributors	Hafslund, BKK	These companies are responsible for the operation and maintenance of the power grid. Further they are responsible for necessary investments and extensions, for keeping the grid open for third party actors and for calculating and implementing tariffs for use.
Suppliers	NorgesEnergi, Fjordkraft, Eidsiva Energi	These companies sell electricity to end users. In principle they trade electricity on Nord Pool Spot in the same rate as the end users consume power. The local distribution company, the former monopolistic utility, is often the dominant local supplier with 80-90% of the local customers.
End user	Households, service sector, industry	End users include among others households and companies. End users can choose freely between power suppliers, but must pay rent to their local grid company.
System Operator (TSO)	Statnett	Security of supply is the basic responsibility of the Transmission System Operator (TSO) Statnett. They are responsible for the hour-by-hour power balance, for keeping sufficient capacity margins in the power production system and in the grid, and for keeping the frequency variations within acceptable levels.
Power Exchange	Nord Pool Spot	<p>The Power Exchange is responsible for the operation of short-term electricity market, by collecting bids for sale and purchasing of electrical power, and matching the incoming bids so that the prices and quantities are settled.</p> <p>Nord Pool Spot is Europe's leading marketplace for trading power (Nord Pool Spot, 2015)</p>

Source: Ministry of Petroleum and Energy (2005); Wangensteen (2012)

6.3 CURRENT TRENDS IN THE INDUSTRY

The situation in the Norwegian power industry is more uncertain now than in a long time, as all the three main business areas are filled with many anticipated changes whose outcomes are hard to predict. A picture of the current trends helps to understand some of the possibilities and threats the companies in this industry are facing, and thereby help us picture the environment the companies are strategizing out from. First, the current trends that are connected to a fast technological development will be presented, before moving on to the trend of increased customer power and at last possible political developments are elaborated on.

6.3.1 FAST TECHNOLOGICAL DEVELOPMENT

Several of the business areas are affected by the fast technological development. Technological developments can often create discontinuous changes, which alter the way business has been conducted and may threaten the existing power structure. Discontinuous changes may be hard to predict, and thus they contribute to making the future very uncertain. In this section, developments that integrate power and ICT will be presented, before we move on to plus customers, electrical cars and new energy sources.

Integration of power and ICT

Smart grid

Smart grid is made possible by the fast technological development, as new and cheaper technology is being introduced. It will create a quantum jump in integration

of ICT on all levels of the power grid, as it merges the power grid with Internet (Reiten, 2014). Smart grid is in simple terms an electricity grid with two-way digital communication in order to optimize supply and demand. The smartness lies in the ability of the grid to transfer both electricity and information between the devices associated with the grid (The Norwegian Smart Grid Centre, 2015). A key feature of smart grid is the possibility to monitor and control all the components and installations from a central location. This provides better information about the components' condition and functioning. Good information and remote controlling make it easier and faster to operate the grid and handle error conditions (The Norwegian Smart Grid Centre, 2015), and thus it will involve changes in some of the power distributors' operations.

One step in the direction towards smart grid, is the introduction of smart meters or automatic meter reading (AMR), and NVE has instructed the grid companies to install smart meters to all customers by 1st of January 2019 (NVE, 2015a). AMR replaces the power meter in the fuse box, and automatically sends readings to the grid company on an hourly basis. Smart meters will give the consumers better information regarding their power consumption, more accurate billing and the possibility of automatic control of consumption. The customers will have the opportunity to take control of their own electricity consumption and use energy in a more flexible, efficient and environmentally effective manner (NVE, 2015a).

Elhub

The data from the smart meters will be stored in Elhub, a Norwegian datahub that will collect all the readings and make them available to the power suppliers and their customers. The overarching purpose of Elhub is to establish an economically efficient ICT infrastructure for the power sales market in Norway. Further, Elhub should facilitate that third party actors can, after direct legal agreement with the end customer, extract measurement data needed to carry out services for their end customers (Statnett, 2015). Elhub opens up for development of new services for the customers. Smart grid combined with Elhub may contribute to large changes in the end customer segment.

Smart homes

Smart homes are an example of services that integrate power and ICT and are made possible by the technological development. Smart homes are houses equipped with highly advanced systems that enable the occupants to remotely control lighting, temperature, alarms and other electronic devices. Today, there are only two companies in the Norwegian power sector that offer services related to smart homes. Fast technological development is expected to create new and cheaper devices, which presumably will accelerate the growth of the smart home segment. There is also a great possibility that third party actors, like for instance Google and Apple, will enter the end user market, either within smart homes or with other new services. It is difficult to predict how the market will evolve, and the environmental uncertainty in the end customer segment is thus high.

Plus customers

The fast technology development in the industry also opens up for the possibility for an end user to produce his own power and sell the surplus power back to the power company and thereby becoming a plus customer. A plus customer produces his own power, using for example solar cells or windmills. In periods where the end user produces more than he consumes, the surplus production can be transferred back into the distribution grid. If the production is less than needed, the end user can buy the rest from the power supplier. NVE has given an exemption that makes it easier to become a plus customer. The consumer will only pay grid tariffs for the transport of the power they transfer back to the power company, net per hour, and not on the power they use themselves. Today, a plus customer cannot supply power to other end users (NVE, 2013b).

Plus customers can pose challenges for the grid companies as the Norwegian power grid historically has been built to support power flow in one direction: from large power facilities with high voltage to the distribution grid and end users with low voltage. Plus customers can at times cause the power flow to change direction in the distribution network, which may affect the voltage and supply to other customers. The grid company must therefore ensure that the production facility is equipped in such a way that it does not create too much interference in the network (NVE, 2013b). However, in the future this may create a bigger problem, if a larger proportion of the customers become plus customers. This creates a need for a smarter grid. Today, it is not profitable being a plus customer, but as the technology develops and become

cheaper, there will probably be an increase in number of plus customers. The development is uncertain and it can create challenges for the grid companies and reduce the demand for electrical energy, which affects the power producers.

Electrical cars

There have been large technological developments related to electrical cars in the later years, and it is expected that Norway will have more than 50 000 electrical cars within May 2015 (Salvesen, 2015). The technological development will most likely continue and it is expected that the amount of electrical cars will increase. It is suggested that by 2020, there should be 200 000 electrical cars in Norway in order to meet the goals for CO₂-emissions from new cars (Transnova, 2014). However, electrical cars create problems for the power distributors, as charging them are very power consuming (kW), and today's grid is not properly dimensioned for this increase. Other power consuming products like induction furnace, also contributes to the power challenge in the grid.

The future contains several challenges related to the grid, like increased need for capacity and increasing number of power providers. The grid also needs modernization as it is getting older and is about to reach the end of its useful lifetime. This has led to a massive need for investment in the grid in the coming years, and already now record high investments in the grid have been reported (Statnett, 2013).

New energy sources

Several new sources of renewable energy have emerged the later years, and this alternative energy is considered to be necessary for reaching EU's and Norway's goal for renewable energy. This goal is elaborated upon in Section 6.3.3.

Wind power, solar power, bioenergy, small hydro, ocean energy and thermal energy are examples of new renewable energy sources that have emerged in Norway lately. As of today, these new technologies are less profitable than regular hydropower, and in many situations they are not profitable at all. For instance, regular hydropower has a levelled cost of electricity of 0.25 NOK/kWh, while solar power has 1.25 NOK/kWh (NVE, 2015d). In the first quarter of 2015, solar power would not have been profitable, as the average market price for electricity has been 0.31 NOK/kWh (Statistisk Sentralbyrå, 2015). To support and prompt the development of new renewable energy green certificates have been introduced, which is a support scheme for electricity produced by renewable sources financed by the power sales customers (NVE, 2015b).

Technological development is likely to improve the profitability of the new renewable energy sources and thus considerably increase the occurrence of these. For instance, a type of spray-paint have been developed that can turn anything into solar panels, just by applying it (Woolaston, 2014). This would lower the investment cost considerably.

The new types of renewable energy sources will however, contribute to the

existing production surplus of energy in Norway. The technological development and the green certificates will increase today's oversupply of energy, making the electricity prices even lower. The power producers might therefore get significantly smaller incomes and in the future kWh might become almost free of charge.

6.3.2 INCREASED CUSTOMER POWER

Another trend in the Norwegian market is that the power is shifting downstream to the customers. The power-shift from upstream to downstream might be further prompted by plus customers, the technological development in smart grids and the supplier centric model, which is elaborated on in Section 6.3.3. Based on this many new business areas may arise with the customer in focus.

The power companies themselves are recognizing that the monopoly business, power distribution, will not alone give sufficient profits, and many of the companies have entered more customer focused areas like telecommunications (BKK Nett, 2001). The business model in the power industry has been based on the premise that power is a simple commodity, operational strategies focuses on reliability of supply, one way flow of power from provider to consumer and energy sales that are based on simple pricing structures. This model is no longer sustainable (Klose, Kofluk, Lehrke, & Rubner, 2010) and the companies therefore have to change.

6.3.3 POLITICAL INFLUENCES

The power industry is a highly regulated industry, and there are several upcoming regulations and other political influences

that create uncertainty for the companies in the industry. This section will elaborate on structural changes, the harmonized Nordic retail market and at last, the Renewable Energy Directive.

Structural changes

The government wishes to create a more efficient grid with fewer actors, by realizing economies of scale and making the coordination between companies easier (Reiten, 2014). Today there are large differences between how much customers pay in tariffs, due to both inefficient grid companies and large differences in population density. The desired consolidation in the industry is aimed at reducing the large differences in distribution grid tariffs paid by the customers. Another aim is to make the companies equipped to handle future requirements for power sales and the investments that naturally follows (Reiten, 2014). In order to decrease the number of power distributors, the Reiten committee suggests to impose the law of functional and corporately separation on all companies in the industry, so that the coalition of companies are accelerated. The Norwegian Energy Act §§ 4-6 and 4-7 imposes functional and corporately separation between monopolistic grid activities and the competitive activities, and if it is made applicable for all companies, it would likely force smaller companies to sell out all or parts of their company, as they will not be able to run two distinct companies. The report has been out on hearing, and are now under evaluation (Ministry of Petroleum and Energy, 2014a).

Harmonized Nordic market and supplier centric model

A harmonized Nordic retail market is under development, and this common market would increase the competition on power sales even further and together with the technological development in smart grids, new actors and services are likely to emerge.

In 2005 the Nordic Ministers of Energy agreed on objectives for further development of the Nordic retail market, with the main goal being to create harmonized Nordic solutions and eliminate the biggest entry barriers for suppliers and service companies entering the Nordic market. The harmonized solutions are based on a supplier centric model which has a main purpose of making it easier for the customers by only having to relate to one market player (NordREG, 2014). The Nordic Energy Regulators (NordREG) are working across borders towards the objectives of achieving a market which is more customer friendly, better functioning, has improved competition and efficiency, at the same time as it complies with the development in the EU and ensures distribution system operator neutrality (NordREG, 2014).

A common market will likely increase competition among suppliers, which again will improve the efficiency in the market. The customers will benefit from this by an increased pressure on end user prices, and a wider selection of products and services to match their needs. For suppliers a common market with low regulatory or technical obstacles will provide a chance to operate in a larger power market, which may lead to improved efficiency and

reduction in unit costs (NordREG, 2010). Combined billing is one measure towards a supplier centric model, and it implies that power suppliers will collect payment from both the power sales and the grid tariff on the behalf of the grid companies. The grid companies will then become market facilitators while the power suppliers will have the main role in the market. The grid companies will still be responsible for providing grid related customer service, and other grid related issues as for instance interruptions and technicalities around metering. In Norway combined billing is out on hearing, and is expected to be effective as of January 2016 (NordREG, 2014). This would change the roles in the power industry and move the power distributors further away from the customers.

Renewable Energy Directive

EU has, through the Renewable Energy Directive established an overall policy for the production of renewable energy sources. The policy requires that at least 20% of the energy needed in the EU should be supplied from renewable sources by 2020 (European Parliament, 2009). Due to the directive, there will be an increase in energy from renewable resources like wind and sun. These sources are however, difficult to regulate and will create large fluctuations, as there will be a deficit of power when there is no wind and sun, and an overproduction when there is a lot of both wind and sun.

In a global perspective, Norway is only a small producer. However, Norway is in a unique position with regards to renewable energy, as unlike most other countries, nearly all of Norway's electricity

production is based on hydropower (Fornybardirektivet, 2001). Hydropower, on its side, is easy to regulate and can thus be used to level the fluctuations caused by other renewable energy sources. Given enough transfer capacity, this could create new opportunities for the Norwegian power producers. Statnett has been given concession to build two cables overseas,

one to Britain and one to Germany, which are planned to be functional from 2018 and 2020 (Ministry of Petroleum and Energy, 2014b). This may create many possibilities in the industry, as it enables direct transfer of energy to two countries who need to balance their wind and solar power production (NTB, 2014, 2015).

CHAPTER 7

CASE STUDIES

In the following chapter extracts of the interviews are presented to provide an understanding of the case companies. All the interviews are presented in a similar way. First an introduction and description of the company are presented, followed by the history and context. Next, we present how the companies work with strategic foresight and prepare for the uncertain future. Further we will see how the companies have changed their diversification and why they have made the decisions to do so. Lastly, we end each of the case studies with our initial thoughts from the interviews.

Interviews with fifteen CEOs from the respective case companies were conducted. All the interviews were conducted over the phone during the spring of 2015 and lasted about 30 minutes. The interviews were done by the authors and were conducted solely for the purpose of this thesis.

7.1 THE CASE COMPANIES

The case companies all come from the Norwegian power industry and have both power distribution grid and hydropower production operations. Table 2 shows some key properties of the case companies.

TABLE 2: THE CASE COMPANIES

Company	Region	GWh	Grid Customers	Employees	Ownership
Company 1	Southern	> 5000	> 150000	> 1000	> 12 K + 1 other
Company 2	Central	< 100	< 5000	50-200	2-5 K
Company 3	Northern	< 100	5000-20000	50-200	6-12 K
Company 4	Western	> 5000	80000-150000	500-1000	> 12 K
Company 5	Central	3000-5000	80000-150000	500-1000	1 FK
Company 6	Western	100-500	5000-20000	< 50	2-5 K + 1 other
Company 7	Western	100-500	5000-20000	50-200	2-5 K + 2-5 others
Company 8	Western	< 100	< 5000	< 50	1 K
Company 9	Northern	1000-3000	20000-80000	200-500	1 FK, 1 K
Company 10	Central	1000-3000	80000-150000	200-500	> 12 K + 1 other
Company 11	Eastern	3000-5000	> 150000	> 1000	1K + > 12 others
Company 12	Western	100-500	5000-20000	< 50	2-5 K
Company 13	Northern	1000-3000	20000-80000	200-500	> 12 K
Company 14	Northern	< 100	< 5000	< 50	> 12 others
Company 15	Eastern	< 100	5000-20000	50-199	1 K

7.2 COMPANY 1

Company 1 is one of the largest power producers in Norway, and at the same time a major power distributor and power supplier. The interviewee has been in his position as CEO of the company for nine years.

History and context

During the last years, the company has had a clear focus on the core businesses. They have sold out or shut down their businesses related to financial services, consulting, electrical installation and fibre. Further they have entered into wind power and venture business.

Environmental uncertainty and strategic foresight

The CEO of Company 1 believes that the future will hold large changes, and he points out that the traditional way of doing business might be totally changed in the next ten years. All the three main business areas will contain large changes. In power production, for instance, the interviewee believes that the rules of the game will change, as electricity (kWh) will become free of charge and that the customers will rather be charged for the load (kW).

Several projects have been executed in order to follow the developments, and to be knowledgeable and prepared for future changes. The interviewee states that: “We have entered companies which are pretty far ahead compared to what we see of changes in the market today, well aware of the fact that either we hit, or we miss.” The projects are a way of exploring new possibilities, and an example of such a

project is the investment in an aggregator company.

Diversification

According to the interviewee, the company had a clean-up process, as a result of a crisis, and it was made clear that the company should focus on what they were good at, namely energy and other things related to hydropower and renewable energy. Several business areas were sold out or shut down, as a result of this.

The company has entered new areas, but the CEO states that these areas had to be closely related to their core business. The interviewee says that they entered these areas, as they saw new possibilities coming from the EU directives, and wanted to keep up with the developments in the market.

Initial thoughts

Through the interview we are left with the impression that the firm tries to meet the uncertain future by exploring different options. However, it is also clear that the main focus is on their operations within hydropower production. It seems that the company were in several unrelated areas before, but has reduced their diversification and instead focused on their core competences after the company's crisis.

7.3 COMPANY 2

Company 2 is a small actor in Central Norway. The company is a local company and a social actor in the community. The interviewee has been CEO for ten years.

History and context

Company 2 has entered and exited many business areas over the last decade. They operate within many business areas and are still searching for new opportunities. Company 2 has had a process of developing new areas outside their region because there isn't enough business in the region.

Environmental uncertainty and strategic foresight

The CEO of Company 2 thinks the Norwegian power industry will undergo some structural changes in the years to come. He believes that the end user market will be most important in the future, but he is unsure whether it will be today's actors that will present the new products arising in that market.

Company 2 doesn't have a formalized process for strategic foresight, but they do have a cluster in the company that discusses opportunities and business areas to enter. The CEO says they are open for new business areas and tries to pay attention to what is happening in the market, but they don't have a structured system for it.

The CEO says that since they don't have the resources to investigate everything, they need to be smart and do everything better and easier. He emphasizes that big companies don't necessarily have the capacity to turn quickly and he states that:

“The changes are happening so fast that you do not have any planning time anymore. So you have to be quick to turn around.”

Diversification

The CEO of Company 2 tells us that they have entered both unrelated and related business areas. The main reasons for entering the various areas, such as property and ICT, have been the owners' wishes and the local opportunities that have occurred. The CEO explains that business areas that haven't been profitable, as shop activities and consultant services, have been sold or shut down. The CEO says they have undergone a clean-up process where they did consolidate some of the subsidiaries. The CEO of Company 2 believes that it is a strength to be interdisciplinary because the areas are becoming more and more complex.

Initial thoughts

From the interview we got the impression that Company 2 focus on innovation and the possibility to change direction and turn around quickly. The CEO seems to be the driving force in the company and the search for new areas are mostly dependent on him. Even though the company involves themselves when opportunities arise, they do in an unstructured way, so we don't believe they have a deliberate diversification strategy.

7.4 COMPANY 3

Company 3 has activities within all the three main business areas in the industry. Their biggest area is power distribution. The interviewee has worked as a CEO in the company for twelve years.

History and context

The geographical area where the company operates is a deficit area for power. During the last ten years they have entered several business areas to produce power, like tidal power and ocean power. These two areas have however been exited. Besides those two areas, the company has also entered wind power and fibre.

Environmental uncertainty and strategic foresight

The CEO points to the separation of monopolistic activities and activities exposed to competition, when talking about the large future changes in the industry. He also emphasizes that possibilities can occur between the power industry and other municipal services, like water and sewage. According to the interviewee, the company will focus on the large investments needed within the grid area.

Diversification

The security of power supply was, according to the interviewee, the most important factor for entering tidal power, ocean power and wind power. Further, he states that the owners and their wishes were the main factor for entering into fibre. Tidal power was left as the technology failed, while ocean power became too expensive as the power prices fell.

The CEO states that the company may leave some business areas, and become more focused. “I do not think we will enter any new business areas, but it might be that we leave some of the business areas we have been in for quite some time, like production, electrical installation and that type of things.”

Initial thoughts

The interview with the CEO of Company 3 leaves us with the impression that the company does not have a clear focused or diversification strategy, but that they in the future might like to reduce their diversification. It seems that the company has tested out both related and unrelated areas, with varying success, as for instance with the technological development of tidal power, which has failed. Further it seems like the company focuses on the grid, and that they are not aware of all the other changes that will affect their other business areas.

7.5 COMPANY 4

Company 4 has operations in the areas of energy, infrastructure and fibre, and is based in the Western Norway. The interviewee has been in his position as CEO of Company 4 for seventeen years.

History and context

Company 4 has evolved from a traditional power company into a corporation with multiple business areas and has become a major national player within renewable energy. The company has entered several business areas in the last ten years, from gas production to smart house technology and security alarms. The gas production area however, has been exited.

Environmental uncertainty and strategic foresight

The CEO of Company 4 strongly believes that the power in the industry will shift from upstream to downstream. The corporation has structural processes that focus on innovation and trying to foresee the future. The interviewee tells us that each of the subsidiaries has their own department. In addition there is a department in the parent company that deals with developments that covers several subsidiaries or that are outside the subsidiaries' scope.

Diversification

Company 4 has chosen a different path than most of the other companies in the industry. They have had a deliberate diversification strategy since 2001 and the CEO says that nothing happens spontaneously. The interviewee states that they had to search in the breadth, due to limited options for growth in the depth of the traditional business areas. The

company has actively explored new areas and has grown rapidly. Today, one previously unknown area is more profitable than the other traditional areas. As mentioned above, the CEO of Company 4 believes that the power will shift downstream, so their strategy is to pursue the areas closer to the customer. The CEO explains that the main factors for entering the new areas were synergies with existing businesses or to access needed technology. He emphasizes however, that not all investments have been a success, but that to succeed you need to take chances: "If you want to be sure you will succeed with all of your investments, the only way to do it is by doing nothing. Then you will be absolutely sure that you will not make any mistakes."

Initial thoughts

After interviewing the CEO of Company 4, we are left with the impression that Company 4 has a deliberate diversification strategy and a firm grasp on how they will meet the uncertain future. The CEO seems to be well aware of the changes happening in the industry and the company actively tries to understand and prepare for future changes. Company 4 are involved in many areas and one of the new areas has even become larger than the traditional main business areas.

7.6 COMPANY 5

Company 5 is one of the largest power companies in Norway in production, distribution and sales. The interviewee has been working for the company in eight years and been CEO for three.

History and context

Company 5 is a social actor in the community, in addition to being a commercial provider in several of their business areas. In the last decade, they have entered and exited a number of business areas. They have for instance entered fibre and wind, and shut down shop activities and contractor operations.

Environmental uncertainty and strategic foresight

The CEO of Company 5 doesn't believe that the same existing actors will operate in the end user market in the future. He believes that the end user market will undergo a lot of changes and that everything is highly uncertain. Company 5 has therefore invested in a business area that is made specifically for testing new products and services. The CEO explains that they made the investment partially because they wanted to keep up with new opportunities and get to an understanding of the future. He further says that: "We don't have the capacity to be a driving force and develop things, so we need to be able to follow and monitor what is happening and react quickly."

Diversification

Company 5 has been involved in many different areas through the years, but they have sold out of several of them, due to changes in the strategy. The CEO explains that their strategy is to focus on the main

businesses in the value chain, while looking for a customer-oriented leg to stand on. He believes that the power will shift from producers to the customers, but they haven't figured what they want to go for yet.

The interviewee tells us that the company is involved in many different projects that haven't grown to be business areas yet. He mentions that they have tried to be in the business developing of wind turbines, but this hasn't succeeded.

Initial thoughts

After the interview, we are left with an impression that the company's degree of diversification has changed over the years. It seems like they were more diversified in the past, while they in the later years have focused more on their core activities. However, they aren't just focusing on the core either, they have been involved in many different business areas, but haven't always picked the right thing. Some of these choices have probably been the reason for their more focused strategy in the later years.

7.7 COMPANY 6

Company 6 is a medium-sized company, within power production, power distribution and power sales. The interviewee has worked as CEO of the company for thirteen years.

History and context

The company has several business areas and ownerships in other companies. In the last ten years they have entered business areas such as fibre, district heating, and technological development of hydroelectric turbines. The latter business area has just been exited.

Environmental uncertainty and strategic foresight

The interviewee mentions several aspects filled with uncertainty in relation to the industry. However, he puts special emphasis on the change in focus in the industry. The industry has been very used to focus upstream on production and grid, but the interviewee thinks that the industry should become more used to focus downstream and on the customer.

Diversification

The company has an evident diversification strategy, in the opinion of the CEO. "We have a strategy plan and our owners wants us to diversify and have several feet to stand on to spread the risk." The interviewee further states that diversification should be within the field of energy.

The entry into both fibre and technical development of hydroelectric turbines were a wish from the owners. The CEO also claims that the company is evaluating welfare technology, on an order from the

owners. Further he believes that the company is too small for developing this themselves and that they are dependent on collaborating with other firms.

Initial thoughts

From the interview we got the impression that the company is very focused downstream and on the customer. However, it is our impression that the owners have a great influence on what the company ends up doing and that the company waits to see how the industry will change before they decide on anything. Further it seems like the company has a moderate degree of diversification, and that they mainly go into areas that are related to energy.

7.8 COMPANY 7

Company 7 is a medium-sized power company within production, distribution and sales, based in Western Norway. The interviewee has been in his position as CEO of Company 7 for ten years.

History and context

Company 7 has been involved in many business areas the last ten years, such as fibre, wind, security alarm and heat. Wind and security alarm have however, both been wounded up.

Environmental uncertainty and strategic foresight

The CEO of Company 7 believes it will be fewer actors competing in the future. He doesn't believe that the traditional power companies will be in the end user market anymore.

Company 7 uses scenarios to judge whether they should enter an area. The CEO tells us that they explore and map all the areas that can be relevant. However he mentions that: "Our philosophy, which maybe sounds banal, isn't to invent the wheel, but be close to the inventors so we will be able to use it when they have worked it out."

Diversification

Company 7 has been in many different business areas the past decade. The CEO says the reason for entering the areas have been both lack of growth opportunities in their existing areas, and good geographical conditions in the region. The CEO explains that when they abandon an area it is mainly because of changes in the market or that it is unprofitable. The interviewee says they have explored the option of investing in

smart house technology as well, but that it didn't fit with their strategy and with their collaborators.

In the later years they have focused on the power sales and invested outside their own region, but the CEO emphasizes that they will focus on the production and distribution of power as well. Production for instance is planned to increase to twice its current size in a short time.

Initial thoughts

From the interview, we are left with the impression that the company has entered different areas because they saw an opportunity or followed the other actors, and not because they had a deliberate diversification strategy. The company will only diversify if there is low risk and high profits. In addition, since they are planning to double the production it seems that they plan to focus more on the upstream activities in the near future.

7.9 COMPANY 8

Company 8 is a small company, who is active in all three of the main business areas in the industry. The company is owned by one municipality, and operates within that geographical area. The CEO has worked in the company for less than a year.

History and context

The company has in the last ten years made the municipality become one of the municipalities with the highest amount of small hydro power plants. Their business has also expanded into fibre.

Environmental uncertainty and strategic foresight

The interviewee claims that it will become harder and harder to be a small company, and he is sceptical to a new restructuring of the industry. "I fear that there might be merges between small power companies." The CEO thinks that the industry most likely will be merged, but they will not take any measures before it is a requirement from the government.

Diversification

The two areas the company has entered the last ten years have been entered based on a wish from the owner, from the municipality. The CEO says the following about the entrance into fibre: "Great vision and strategies aren't the reason. It's more practical. We are owned by a municipality without much competition on delivering services connected to fibre. If we hadn't done it, nobody would have, as it's not a profitable business." According to the interviewee, there are now plans of outsourcing the operation of the fibre, as

the company seeks to have focus on power production and power grid.

Initial thoughts

The interviewee gives us the impression that the company is an extension of the municipality. It also seems like entering into new business areas are not a part of a distinct diversification strategy, it's rather just a response to the municipality's desires. Further it seems clear that the company is not so eager to follow the development and prepare for the uncertain future. If there aren't any new regulations, the company will not change.

7.10 COMPANY 9

Company 9 is a relatively large company, with operations in power production, distribution and sales. The interviewee has been in his position as CEO of Company 9 for three years.

History and context

The company went through a financial crisis some years ago. Based on this, their strategy is to focus on the production and the distribution of the power, which have led them to sell and close down other business areas. However, before the crisis they were in many business areas, such as fibre, investment and wind power.

Environmental uncertainty and strategic foresight

The CEO believes it will be fewer and larger actors operating in the industry in the future, especially in the grid and end customer area. However, he believes that it will be the same actors that compete, and that no new actors will enter the market. The company doesn't use any strategic foresight activities.

Diversification

Today, Company 9 doesn't have much diversification. The owners had a great influence when entering both fibre and investment, and the interviewee states that: "A reason for entering was a certain political pressure from the owners, who wanted the company to contribute and assist with investments in local companies." The CEO states that they have a strong focus on the core activities and nothing else. The interviewee tells us they have a clearly defined strategy to focus on the core and they will stick to that. The strategy became clearer after the financial

crisis they went through. The CEO emphasizes that they will focus on the power production and the power distribution. They are also focused on power sales, but they don't focus on the customers' needs. The CEO says they are not willing to invest more right now, in neither wind nor customer needs.

Initial thoughts

After completing the interview, we had the impression that the company is really affected by the financial crisis that arose some years ago. The company has decided to only focus on the core activities and forego all other areas. We got the impression that the company isn't interested in diversifying further and that the only thing they can manage right now is to focus on the core activities.

7.11 COMPANY 10

The company is a relative large company with operations within power production, power grid, and power sales. The company has many relatively small owners. The CEO, which was interviewed, has been in for four years.

History and context

The CEO was brought into the company, to conduct a clean-up process. After this, two business areas were exited; fibre was sold out, while the venture company was shut down. The venture business was entered during the last ten years, along with the business area related to building power plants in developing countries.

Environmental uncertainty and strategic foresight

The interviewee points out several areas of uncertainty, and possible scenarios for each. The company has several activities in order to try to understand what the future might bring. According to the CEO, the company had a business developer working there for a few years, to explore new business opportunities. Today however, they only have a person who is monitoring the technology. The interviewee states that this is done in order to see the opportunities and the development, so that the company can understand the coming trends.

Diversification

The company was more diversified before 2010, according to the interviewee. He believes that this was due to the fact that earlier there were very good margins in the power industry, and that there was a wish to employ more of the surplus capital, instead of giving it all in dividends to the

owners. Now however, the CEO claims that the company is more focused on their core business, and that the company exited their fibre activities as a step to streamline their business.

According to the interviewee, the company has looked at smart-home solutions, but have concluded it would be too difficult for them, and that the competition would be great from other larger actors as Google and Apple. The CEO thinks that diversification into other energy sources like solar power would be more applicable for the company, but this is dependent on the technological development. Today, the company has diversified into wind power.

Initial thoughts

Throughout the interview we got the impression that the company is trying to stay updated on the development in the industry. The company is using several foresighting activities, in order to get a better grip of the future. Today, the company seems more focused on their core businesses. They seem more interested in their upstream activities, like solar power, than more customer-oriented activities, as they believe that power production and power distribution are their core activities.

7.12 COMPANY 11

Company 11 is a large power company based in Eastern Norway. The company is one of the biggest actors in Norway within power distribution. The interviewee has worked in Company 11 for five years and has had his position as CEO for three years.

History and context

Company 11 doesn't see themselves as a social actor in the community, but as a commercial company. The company has focus on the core activities, but they have found it necessary to expand into other areas as well in the last ten years. They have entered heat and exited security alarm and fibre.

Environmental uncertainty and strategic foresight

The interviewee believes that in the future the growth potential in the industry lies downstream. The CEO tells us that they have several methods to keep up with the market and to prepare for the future. They carry out market- and competitor analysis, as well as travelling to markets abroad to see what the customers abroad want. The CEO also explains that they have had smart home technology under surveillance for a long time before they acted on it. However, they have now developed a smart home product to be able to gain a position if the market becomes big. Company 11 is preparing for the uncertain future, but are hesitant to invest heavily in new areas just yet.

Diversification

Company 11 focuses on the core activities and the activities closely related to them. The CEO explains that they have a

deliberate focused strategy. They were more diversified prior to the world's financial crisis when they had more capital and resources to invest. However, after the crisis they needed to prioritize and they chose to focus on the core activities. The interviewee says that they have had poor growth opportunities within power production, which is one of the reasons they have become big on distribution and sales instead. The CEO tells us that they aim to grow in the breadth within the downstream activities, both in power sales and in additional services, like smart homes.

Initial thoughts

After the interview, we are left with the impression that Company 11 is well aware of the uncertain future, and that their foresight activities help them make strategic decisions. Their strategy is to focus on the core activities and becoming good as these. However, they have also made investments and secured their position if a new market should emerge in the end customer area.

7.13 COMPANY 12

Company 12 is a relatively small company present in all the three main business areas. The interviewee is CEO for the company and has been in that position for eighteen years.

History and context

The company has entered one business area the last ten years, namely fibre. The company has for a couple of years back merged with another power company.

Environmental uncertainty and strategic foresight

The CEO lists the challenge of getting enough employees as one of the biggest challenges in the future. The company has already had some challenges with attracting enough people.

Another uncertain development is the separation between monopolistic and competitive activities. The interviewee says that they wish to perform the same activities today, but realize that they might have to merge their power distribution activities with a neighbouring municipality to be able to meet the challenges that will come the next five-ten years.

Diversification

The company has during the last ten years, built fibre in the district, and according to the interviewee this was mainly a response to the owners' wish. However, now they consider selling out the fibre grid activities. According to the interviewee, the company wants to focus on the development of the power grid and their hydropower production projects.

The interviewee says that they have evaluated pellets, as a local company had excess shaving. However, the company chose not to prioritize it. The CEO says that the company focuses on their primary activities: "We have demands from our owners, that we should have a certain return and that we should not spread the company over several business areas, as it may imply greater risk for the owners."

Initial thoughts

Based on the interview we are left with the impression that the company is fighting to sustain their current activities, and that they have more than enough with the uncertainty related to employment. Further, they show no sign of using any foresighting activities. It seems like that the company is trying to become more focused and that they don't have any spare capacity to investigate or to develop new business areas.

7.14 COMPANY 13

Company 13 is a medium-sized company based in Northern Norway. They operate within the areas of power production, distribution and sales. The interviewee has been in his position as CEO of Company 13 for fourteen years.

History and context

The company focuses on the core activities, and has been present in fibre during the last ten years. However, they have exited that area and are now focused solely on their core business areas.

Environmental uncertainty and strategic foresight

The CEO believes that changes will happen in both the distribution business and the end user market. The power distribution business will go through a structural change and the end user market will consist of new actors that provide other services than power. Company 13 however, doesn't want to be a first mover. The CEO expresses concern about being in the forefront and says that they would rather wait and see what the government decides.

Diversification

Company 13 went into fibre because there was lack of growth opportunities in their existing business areas. However, because the investment requirement within the production and the grid increased, they needed to make prioritizations and thus they exited the area. The CEO states that they have clear plans to focus on the core and they stick to that, even though the owners would have liked them to try some new areas. He states: "Traditionally speaking, power production, distribution

and sales are the core activities in the power industry and we have strategically moved very little outside of the core businesses." Further he says that they focus on the upstream activities, and that they will possibly collaborate on power sales.

Summary

After the interview, we are left with the impression that the company has a great focus on the core activities and that they will not go outside these in the near future. The company does not seem interested in diversifying after their brief experience with fibre, and they now seem to have a deliberate focused strategy.

7.15 COMPANY 14

Company 14 is a small power company based in Northern Norway. They operate within power production, power distribution and fibre. The interviewee has been in his position as CEO of the company for three years.

History and context

The company is a social actor in the local community. In the last ten years they have built fibre and bought ownership in a wind company together with other local actors.

Environmental uncertainty and strategic foresight

The CEO says they try to exploit what they have today, and that they don't explore anything new. They will rather wait and see what happens, even though they believe that large changes may occur. The CEO tells us that they don't have any specific activities for exploring and researching new areas.

Diversification

The CEO claims they went into fibre because the owners wanted them to. He also says they bought wind because the politicians in the county wanted it. The geographical location has led them to focus on the distribution grid and the CEO emphasizes that if new areas are to be entered they need to be closely related. The company will focus on the core activities, and the CEO states that: "We have no immediate plans to try something new. This is the power industry; we're slow and old-fashioned. Our strategy is to engage in distribution of power and not much else." They have however built fibre, which is outside their core activities, but the CEO

emphasizes that this area will not be focused on in the future.

Initial thoughts

After the interview, we are left with the impression that Company 14 has more than enough with operating their distribution grid. They have a low degree of diversification and it doesn't seem like they have the resources, competences, or the capital to explore new areas. The company waits and see what happens before making a decision to invest in a new area. Further they haven't spent much time with exploring new business areas.

7.16 COMPANY 15

The company is a small-medium sized company with operations in all the three main areas. The interviewee is the active CEO, as the CEO is on leave. He has been in that position less than a year, but has worked in the company for several years.

History and context

The company has entered several business areas the later years, namely energy labelling and consulting, heat pumps and fibre. Today, the company is no longer in the two former business areas.

Environmental uncertainty and strategic foresight

The interviewee believes that there will be several changes in the industry, and he is absolutely positive that there will be fewer actors involved in power distribution.

The company does not have anyone today working with business development, but they try to follow the developments, states the interviewee. To do this, they attend forums where the development of the industry is discussed.

Diversification

The company has investigated several business areas in order to try to diversify. One of the areas they entered was heat pumps, but it was left within a year: “It was something we didn’t manage. I think it was because we were not competent enough on that area.”

The company has invested in new business areas, but several of these have been unsuccessful and have led to a great loss of money. The CEO puts it this way: “The consequences of the failed areas, was what

we lost a lot of money. This was a contributory cause to the change in strategy, were the focus was moved to our core business.”

The interviewee says that the company has a focused strategy and that they have been doing well for a couple of years, and therefore it is natural to look for new opportunities for the future.

Initial thoughts

From the interview we are left with an impression that this is a company that has tried to diversify themselves in the past, but failed, and therefore needed to focus on their primary activities, as they had very limited resources. However, they are now positive about diversifying in the future.

CROSS-CASE ANALYSIS

CROSS-CASE ANALYSIS

In this section, a cross-case analysis of the case companies is performed. By using cross-case analysis, the themes, similarities and differences are compared and an overall picture of the cases is shown. A cross-case analysis is according to Yin (2014) permitted when you have multiple cases and is both a way of aggregating across cases and a mean for making generalizations.

This chapter begins with an explanation of the concepts we use in the analysis to give the reader an understanding of how we have interpreted the empirical findings. Furthermore, the findings from the case studies are first analysed in relation to environmental uncertainty where we will go further into the topic of strategic foresight. At last, the change in diversification is analysed by looking at market entries, evaluated and rejected areas and market exits. In addition, some connections related to diversification is presented.

8.1 EXPLANATION OF CONCEPTS

This section contains an explanation of how we have interpreted and used different concepts and terms in the cross-case analysis. First strategic foresight is explained, and then the definition of related diversification used in the analysis is presented, before the various factors obtained from the coding process of the interviews are shown.

In this analysis a company has been said to have strategic foresight activities, if the activities presented by the CEO are perceived as a way to better understand some element in the future.

Further, in the analysis of diversification, the business areas have been categorized into related and unrelated business areas. The categorization is based on the definition of resource-relatedness, which includes all the different types of resources. However for the area to be categorized as related, the resources must be clearly connected to the main competence in the firm, and not just to the competence in the support functions. For an area to be categorized as unrelated, the opposite applies. An unrelated business area is an area whose resources are not connected to the core resources of the existing business areas.

Ten factors that may explain why the companies entered or exited the different business areas, were found while analysing the research data, as explained in Section 5.3.1. The factors are the key influences obtained from the empirical evidence and are a collection of the most prominent influences mentioned by the CEOs in the interviews. Based on the findings there are different reasons for entering and exiting a business area, so the factors are divided into two groups. Table 3 shows the factors influencing the companies when entering a business area, while Table 4 shows the factors leading the companies to exits an area.

TABLE 3: FACTORS INFLUENCING THE ENTRY OF AN AREA

Factors when entering	Explanation
Keep up	The company wished to keep up to date and get an understanding of new areas.
Lack of growth opportunities in existing areas	The company felt that there weren't enough growth opportunities in their existing areas or markets and thus they felt they needed to branch out.
Opportunities	The company saw an opportunity in the market, due to the development in the industry, political guidelines or environmental resources and good conditions, and decided to go for it.
Ownership	The company's owners imposed or wished that the company would enter an area, and this desire was followed.
Synergies	The company entered the area, because the new area had synergies with an existing business area.

TABLE 4: FACTORS INFLUENCING THE EXIT OF AN AREA

Factors when exiting	Explanation
Changes in the market conditions	The company left an area as they experienced an unforeseen change in the market that caused the business area to loose position.
Changes in strategy	The company had changes in the strategic direction or strategic focus, and left the area as it was no longer within the company's strategy.
Lack of competences	The company left the area as they lacked the required expertise and competences.
Prioritization of investment	The company exited the area, as they prioritized other business areas. The company had to prioritize due to capital shortage or investment requirements in other areas.
Unprofitable	The market had poorer conditions than the company expected, and they left it because the area were too costly or had a poor profitability.

In the analysis, the factors have also been divided into internal and external factors based on the origin of the factor. For example, ownership is characterized as an internal factor since the owners are a part of the company, thus the factor is originated from within. However, the different factors may be evaluated differently based on the situation. Opportunities for instance can be assessed as both an internal and external reason as the opportunity can have originated from within the company in one situation as well as from the market or elsewhere in the environment in another situation.

8.2 ENVIRONMENTAL UNCERTAINTY

To be able to answer the research questions, the context must be understood. It is crucial to see whether the companies perceive the environment as uncertain, as the propositions about diversification rely on this. This section addresses the companies’ perception of the future and if they have made use of strategic foresight activities.

From the industry review it becomes clear that the industry is facing many changes in all the three main business areas, as they are affected by fast technological development, increased customer power and political influences. Based on the case studies it seems that all the case companies perceive the future as very uncertain, both when it comes to the changing environment and when it comes to how the companies might change. The CEOs of the case companies believe there will be many changes in the future, but they do not know what the changes will be, when the

changes will occur and what the consequences will become.

Strategic foresighting can be used to try to understand some parts of the uncertain future. Table 5 gives an overview of the companies and whether they have applied some strategic foresighting activities or not.

TABLE 5: USAGE OF STRATEGIC FORESIGHT ACTIVITIES

Company	Strategic foresight activities
Company 1	Yes
Company 2	No
Company 3	No
Company 4	Yes
Company 5	Yes
Company 6	No
Company 7	Yes
Company 8	No
Company 9	No
Company 10	Yes
Company 11	Yes
Company 12	No
Company 13	No
Company 14	No
Company 15	No

As seen from the table, only the minority of the case companies use some form of strategic foresight activities. Out from the case studies it is clear that, even within the companies that use strategic foresight activities, the variation is great both in terms of how widespread the activities are in the company, and in terms of which business areas the activities are focused on.

The companies that use strategic foresight activities explore different areas of the value chain. None of the companies have foresight activities that include all the three main business areas. The companies do not look at the whole picture, just pieces of it. Some of the case companies use their resources on the upstream activities and areas related to these, such as the exploration of an aggregator company. Others again, focus on developing new areas in the downstream part of the supply chain, such as smart house technology. The great environmental uncertainty the companies face may be a reason for this division since the uncertainty is so high in the entire supply chain and the companies don't have the capacity and competence to explore and pursue new areas in the entire value chain.

Many of the companies imply in the interviews that they will not do anything before the government impose new regulations and in a way force them to change. The reason for this hesitant and cautious attitude may be because they don't have the capacity or resources to deal with the uncertain environment and explore new alternatives, as they have more than enough with handling their current businesses. It can also be because the companies know that the government will not pass and impose a regulation over night; the companies will be given time to adapt as there will be some time after the regulation is passed and before it is imposed. As both power production and power distribution is regulated and new

regulations take time, the companies know that they will most likely always be in business, if they are able to change in a reasonable pace when needed. Thus, the companies may not be as incentivised to use foresighting activities to try to deal with the uncertain environment.

8.3 DIVERSIFICATION

In order to understand how the diversification changes when the companies are faced with an uncertain future and the reasons for this change, we will take a closer look at the case companies' market entries, evaluated and rejected business areas and the market exits. After looking into the three areas individually, the total change in diversification will be analysed. At last some connections found in relation to diversification will be elaborated on.

8.3.1 MARKET ENTRIES

To be able to answer our research questions and find the change in the diversification we first analyse the new market entries that the companies have made in the last ten years.

Table 6 presents the different areas the companies have entered, what kind of factors that influenced the decision, if these were external or internal factors, and what type of diversification the entry was.

TABLE 6: MARKET ENTRIES AMONG THE CASE COMPANIES

Companies	Entered areas	Factor	Internal	External	Related	Unrelated
Company 1	Wind	Ownership	I		R	
		Opportunities		E		
	Venture	Keep up	I			U
		Opportunities		E		
Company 2	ICT	Ownership	I			U
	Venture	Opportunities	I			U
	Real estate	Ownership	I			U
	District heating	Opportunities		E	R	
Company 3	Tidal power	Lack of growth opportunities in existing areas		E		U
		Opportunities		E		
	Ocean power	Lack of growth opportunities in existing areas		E		U
		Opportunities		E		
	Fibre	Ownership	I		R	
	Wind	Lack of growth opportunities in existing areas		E	R	
Company 4	Gas	Synergies	I			U
	Smart houses	Opportunities		E		U
	Alarm	Opportunities		E		U
Company 5	Fibre	Ownership	I		R	
		Opportunities		E		
	Wind	Opportunities		E	R	
		Lack of growth opportunities in existing areas		E		
	Hydropower abroad	Lack of growth opportunities in existing areas		E	R	
	Research centre	Keep up	I			U
Company 6	Fibre	Ownership	I		R	
	District heating	Opportunities		E	R	

	Hydroelectric turbines	Ownership	I			U
Company 7	Wind	Opportunities		E	R	
	Alarm	Lack of growth opportunities in existing areas	I			U
	Heat pump	Lack of growth opportunities in existing areas	I			U
	District heating	Opportunities		E	R	
	Fibre	Opportunities	I		R	
Company 8	Fibre	Ownership	I		R	
	Small hydro power plants	Ownership	I		R	
		Synergies	I			
Company 9	Fibre	Ownership	I		R	
		Synergies	I			
	Investment	Ownership	I			U
	Wind	Opportunities		E	R	
		Synergies	I			
Company 10	Venture	Opportunities	I			U
	Hydropower abroad	Opportunities		E	R	
Company 11	District heating	Lack of growth opportunities in existing areas		E	R	
		Synergies	I			
Company 12	Fibre	Ownership	I		R	
Company 13	Fibre	Lack of growth opportunities in existing areas		E	R	
Company 14	Fibre	Ownership	I		R	
	Wind	Ownership	I		R	
Company 15	Consulting	Opportunities		E		U
	Fibre	Ownership	I		R	
	Heat pumps	Opportunities		E		U

The table above contains several interesting findings worth taking a closer look at. All the case companies have entered new business areas the last ten years, and the most popular business area has been fibre. An interesting notion is that a great majority of the entries into fibre were caused by ownership. An explanation might be that the companies' have a long history of performing socio-critical tasks for their public owners, and a fibre grid can be considered beneficial for the society. Other areas as wind and district heating have gained some popularity in the industry, however there is a large variation in which areas the case companies have entered.

Table 6 also shows that a slight majority of the market entries were into related areas, compared to entries into unrelated areas. Overall the decisions to increase diversification, namely the entry decisions, were affected by both internal and external factors, where internal factors had a small majority. This small majority of internal factors were also evident when looking at diversification into unrelated and related areas separately. The type of factor affecting the diversification choice can thus be said to be the same when entering related and unrelated areas. The two directions of diversification therefore seem to be almost equally concerned about the need for market adaption and the need for resource leveraging.

However, when looking closer at the different factors, there are differences between the factors that make companies enter related contra unrelated business areas. For related entries, ownership seems to be the most prominent factor, whilst for unrelated entries opportunities are often

mentioned by the case companies as a factor. In total the occurrence of the factors is shown in Figure 12:

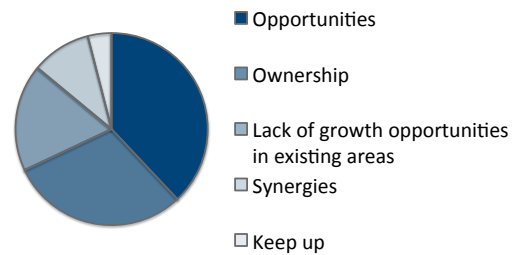


FIGURE 12: FACTORS FOR ENTERING NEW BUSINESS AREAS

An interesting notion here is the high occurrence of ownership as a factor for why companies diversify. This factor has only received limited attention in the literature, compared to both the factors associated with lack of growth opportunities in existing areas and synergies, which have been thoroughly discussed. The high occurrence of ownership as a factor might be because many of the companies in the industry are social actors in their local community, with strong connections to their public owners.

In all the situations when the case companies have entered new business areas based on the wish to keep up with the development in the environment, they have entered unrelated business areas. An explanation for this might be that when a company wish to keep up, the focus is already foremost on the market, and the need for exploiting the existing resources have likely been a subordinated wish. Further, the environment might change drastically and to be able to keep up with the market, totally new competences and resources may be needed, as it might not longer be sufficient to develop the existing resources. This finding is in accordance to

the outside-in view that suggests that the environment is more important than resources. Based on this theory, companies should focus on the changes, adapt to the environment and try to develop new capabilities, instead of prioritizing the current resources, focusing on shaping the market and developing their current resources to stay competitive in a changing environment.

8.3.2 EVALUATED AND REJECTED AREAS

By looking at the areas the companies have evaluated, we can see if they have made an attempt to adapt to the environment or not. The direction of diversification and the reasons for why they rejected the areas are helping us answer our research questions. Table 7 shows the various areas that the companies have considered, the factors that have influenced the choice, if the factor is internal or external and in what direction the companies have considered to diversify.

TABLE 7: CONSIDERED AND EVALUATED AREAS BY THE CASE COMPANIES

Company	Considered and rejected areas	Factor	Internal	External	Related	Unrelated
Company 1						
Company 2						
Company 3	District heating	Unprofitable		E	R	
Company 4	Investment	Changes in strategy	I			U
		Unprofitable	I			
	Wind	Unprofitable		E	R	
Company 5	Wind turbine	Unprofitable	I			U
Company 6	Consulting	Changes in market conditions		E		U
	Charging of electric cars	Changes in market conditions		E		U
Company 7	Gas	Prioritization of investment	I			U
Company 8	Consulting	Prioritization of investment	I			U
	Investment	Prioritization of investment	I			U
	Windmills	Prioritization of investment	I			U
Company 9						
Company 10	Smart homes	Unprofitable	I			U

Company 11	Pellets	Changes in market conditions		E		U
		Unprofitable		E		
Company 12	Pellets	Lack of competences	I			U
	Small hydro power plants	Unprofitable	I		R	
Company 13	Wind	Unprofitable		E	R	
Company 14						
Company 15	Research centre	Unprofitable	I			U
	District heating	Unprofitable		E		
		Lack of competences	I			R

The assessed areas range within a variety of areas, and no area are represented more than twice. The variation and the dispersion in the evaluated areas might indicate that the companies are uncertain about what will be essential in the future and can thus support the finding of a high environmental uncertainty. A great majority of the evaluated and rejected areas are classified as unrelated diversification. An explanation for why the case companies have rejected mostly unrelated areas might be that they have evaluated most unrelated areas, in order to try to explore new business areas, as the future is highly uncertain. Further, the companies might have rejected the unrelated areas more often than related areas, as they require new competence and skill-set, far away from the current expertise, and it might thus have been too difficult or too risky for the companies. Related diversification might seem safer, as it is related to the companies' current knowledge.

Another finding worth mentioning is that the decisions to exit the areas were influenced by both external and internal

factors. However, the majority of the factors were internal. When looking at the rejections of unrelated areas separately, it is clear that the majority of the factors affecting this choice are internal. Based on this it might seem that the companies have lacked the competence required for making the unrelated business area profitable enough for it to be prioritized in the future.

Looking at the factors influencing the choice of rejecting an evaluated area, reveals the following relative appearances as shown in Figure 13.

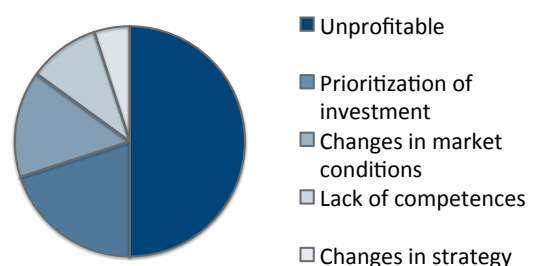


FIGURE 13: FACTORS FOR REJECTING EVALUATED BUSINESS AREAS

Unprofitability is the major reason for the companies not entering the evaluated areas. This might be understandable

considering that when developing new ideas it is common to test out multiple ideas before finding a profitable one.

8.3.3 MARKET EXITS

Exiting a business area will make the diversification decrease, and examining this may reveal findings that can shed light

on how and why companies change their diversification. Table 8 below shows the business areas that each company has left, the factors affecting this choice, if the factor is internal or external and if the exited areas are unrelated or related.

TABLE 8: MARKET EXITS AMONG THE CASE COMPANIES

Company	Exited areas	Factor	Internal	External	Related	Unrelated
Company 1	Financial services	Changes in strategy	I			U
	Consulting	Changes in strategy	I			U
		Unprofitable		E		
	Electrical installation	Changes in strategy	I			U
	Fibre	Changes in strategy	I		R	
Company 2	Shop activities	Unprofitable		E		U
	Consulting	Changes in strategy	I			U
Company 3	Tidal power	Lack of competences	I			U
	Ocean power	Changes in market conditions		E		U
Company 4	Gas	Prioritization of investment	I			U
Company 5	Contracting	Changes in strategy	I			U
	Shop activities	Unprofitable		E		U
Company 6	Hydroelectric turbines	Prioritization of investment	I			U
Company 7	Wind	Unprofitable		E	R	
	Alarm	Prioritization of investment	I			U
Company 8						
Company 9	Fibre	Changes in strategy	I		R	
	Investment	Changes in strategy	I			U
Company 10	Fibre	Changes in strategy	I		R	

	Venture	Prioritization of investment	I			U
Company 11	Alarm	Prioritization of investment	I			U
	Fibre	Changes in strategy	I		R	
Company 12						
Company 13	Fibre	Prioritization of investment	I		R	
Company 14						
Company 15	Consulting	Unprofitable		E		U
		Changes in market conditions		E		
	Heat pumps	Lack of competence	I			U

The market exits are from a wide range of business areas. However, one area is clearly exited the most, namely fibre. Changes in strategy is essentially the factor that has made companies exit fibre. This might be because the companies have now finished the capital-intensive construction of the socio-critical infrastructure and realize that mainly operating the fibre is not as link with the core business as earlier thought and not a particular wish from the owners. The owners are likely to want to create a fibre infrastructure, as it would benefit the community, however, as many of the case companies emphasize, the construction is not necessarily profitable. As ownership is the main reason for why the companies enter fibre, it would seem that the owners use the power companies to build out the fibre grid that no one else would. Mainly operating the fibre grid, after it is constructed, may be profitable and there are several actors that are willing to this. The owners therefore no longer need the power companies to be involved in fibre after it is constructed, and the companies may exit the business area with

the blessing from their owners. As entries into fibre are mostly affected by ownership, and fibre is the most exited area with changes in strategy as a factor, it might seem that great influence by owners when entering, can lead a company to over-diversify beyond their strategy.

A great majority of the exited areas are unrelated business areas. As there is such a big difference in the amount of the two directions of diversification, while the market entries are almost equally distributed between the two, it seems that unrelated diversification is inferior to related diversification. This subject will be commented on further when answering the propositions.

The majority of the factors affecting the companies to exit their business areas are internal. This is also the situation when examining the exits of related and unrelated business areas separately. Based on this it seems that independently of the direction of diversification, internal factors are the most prominent when leaving a

business area and that the trend in the industry is to focus on the need for resource leveraging. By looking more closely at the factors for exiting a business area the following is found.

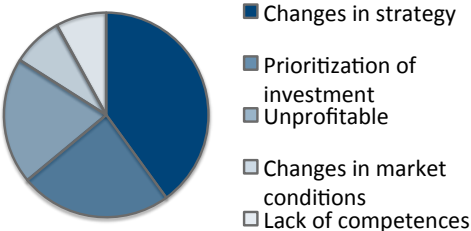


FIGURE 14: FACTORS FOR EXITING BUSINESS AREAS

Changes in strategy and prioritization of investment are the two main factors. Underlying both these factors, are a company’s previous belief that the business area in question is of interest, however as times have changed, this area is no longer that interesting, independent of the profitability of the business area. It may seem like the companies have tried to focus on their core operations, as they are not exiting areas primarily due to lack of profitability, but rather due to strategic considerations. An explanation for this could be the development in the industry the last ten years. Prior to the financial crisis in 2009, the Norwegian power sector was doing well and had excess capital available for investments in new areas. However tougher financial times, with a large reduction in electricity prices and increased need for investments in the grid, may have forced the companies to focus on their main activities including their socio-critical operations and exit other areas.

8.3.4 IN TOTAL

Examining the total change in entries versus exits may help us answering our propositions and our research questions, as it could provide valuable insights on the development of diversification among the actors in the Norwegian power industry when faced with an uncertain future.

The changes in diversification over the last ten years can be seen from the total change in number of business areas, shown in Table 9.

TABLE 9: TOTAL CHANGE IN NUMBER OF BUSINESS AREAS

Company	SUM
Company 1	-2
Company 2	2
Company 3	2
Company 4	2
Company 5	2
Company 6	2
Company 7	3
Company 8	2
Company 9	1
Company 10	0
Company 11	-1
Company 12	1
Company 13	0
Company 14	2
Company 15	1

From the table, it can be seen that a large majority of the case companies have become more diversified the last decade, as they have entered more business areas than they have exited. This can have a connection with the highly uncertain future

the companies are facing and that they want to have more business areas to fall back on in case some major changes appear in the existing areas. However, a few of the companies have chosen to not diversify or to move in the opposite direction and exited more business areas

than they have entered, making the company more focused.

Taking a closer look at the direction of diversification, the following analysis is found:

TABLE 10: TOTAL CHANGE IN RELATED AND UNRELATED AREAS

Company	Entry		Exit		SUM (Entry - Exit)		Comments
	Related	Unrelated	Related	Unrelated	Related	Unrelated	
Company 1	1	1	1	3	0	-2	Less unrelated
Company 2	1	3		2	1	1	More related and more unrelated
Company 3	2	2		2	2	0	More related
Company 4		3		1		2	More unrelated
Company 5	3	1		2	3	-1	More related and less unrelated
Company 6	2	1		1	2	0	More related
Company 7	3	2	1	1	2	1	More related and more unrelated
Company 8	2				2		More related
Company 9	2	1	1	1	1	0	More related
Company 10	1	1	1	1	0	0	Equal
Company 11	1		1	1	0	-1	Less unrelated
Company 12	1				1		More related
Company 13	1		1		0		Equal
Company 14	2				2		More related
Company 15	1	2		2	1	0	More related
SUM	23	17	6	17			

Out from the table, several things are worth noticing. All besides one of the companies that have increased their diversification have done so in the related direction. A few of these companies have also diversified in the unrelated direction.

The amount of entries into and exits from unrelated business areas are equal, which may indicate that in total the case companies have not moved towards unrelated diversification the last ten years, even though the future is uncertain. However, there seems to be a movement

towards related diversification as many related areas have been entered, while only a few have been left. This will be discussed further when answering the propositions.

Looking at both the entered and the exited business areas, there are several business areas that have been both entered and exited during the last ten years. Out of these there are a majority of unrelated business areas, which further can indicate that the companies are favouring related diversification. The majority of the business areas that have both been entered and exited the last ten years, are affected by the same type of factor both times. The choice of entering and exiting has either been based on internal factors or they have both been based on external factors. A possible explanation for this could be that when a business area is entered based on internal factors, the company considers resource leveraging and the internal potential to be the most important for that area, and thus these considerations will be the most important ones when choosing to exit it as well. On the other side, when an area is entered due to external factors, the company believes that the external potential is most important, and thus external factors will also be considered the most influential when deciding to exit the area. This argument is supported by the findings that none of the areas that have been exited due to external factors, have been influenced by internal factors when entered.

8.3.5 ADDITIONAL CONNECTIONS

In this section connections that are not necessarily directly relevant to the research questions, but still interesting will be

elaborated on. The linkages related to the propositions will however be answered in Chapter 9. First, the connection between the diversification and value chain focus will be presented. Secondly, the linkage between diversification and the companies' abilities to explore and exploit will be analysed. Further strategic foresight and diversification will be elaborated on before moving on to analysing the linkage between ownership and diversification. At last the relationship between company size and diversification will be investigated.

Value chain focus and diversification

Examining more closely the business areas the case companies have entered and exited, the following is noticed. When entering new business areas, the case companies enter approximately the same amount of upstream and downstream activities, however, when it comes to the exited areas the majority is connected to downstream activities. This development towards upstream operations is not in line with the trend in the industry of increased customer power. A possible explanation for this may be that the companies believe that they are not able to compete in this area against new entrants like Google, due to a small size and insufficient competence on the subject. Instead of trying to go towards competitive business areas with increased customer power and a need for customer orientation, the companies move towards highly regulated, upstream business areas.

Ambidexterity and diversification

The industry is meeting large changes and the companies can either adapt to changes by exploration of new possibilities or by

exploitation of their existing resource base. The case companies have approximately entered the same amount of related and unrelated areas. However, when it comes to the evaluated and rejected and the exited areas, unrelated areas are overrepresented. Exploring completely new areas will in most cases require entry into unrelated areas, whereas entering a related business area could be seen as a way to exploiting the existing resources. O'Reilly and Tushman (2004) argues that the secret to staying competitive is to be an ambidextrous organization, which involves being equally good at actively exploring and developing new innovations as well as exploiting and developing the existing resources.

As the companies have entered both related and unrelated areas almost equally, it could be argued that they are trying to be ambidextrous by both exploring new possibilities and exploiting the existing resources. However, as the companies mainly reject or leave unrelated areas, this might indicate that the case companies are not able of developing new areas, and thus are not able to explore and be ambidextrous. The companies might not be able to develop unrelated areas, due to limited knowledge and experience from this type of activity, as the companies in the industry historically have kept to the three main business areas.

Even though some of the case companies are diversifying into unrelated areas, it could be questioned whether this is an act of true exploration or not. The companies enter areas that are unrelated in terms of core competence, but the areas are still revolving around some of the same things. Take for instance the entry into selling and

installing heat pumps. The entry requires new resources, as the installation requires other capabilities than the ones coming from operating the grid, and the sales process is completely different compared to the sales of electricity, but the area is still about energy. The same also holds for the technological development of tidal power for instance. Out from the case studies, it could be argued that the companies' ability to truly explore completely unrelated areas and to search beyond the boundaries is limited. The companies' restricted abilities of extensive exploration, might be due to the industry's low development rate and high degree of regulations, as it has shielded the companies and thereby limited their experience with large changes.

Strategic foresight activities and diversification

Another connection worth mentioning is the relation between conducting strategic foresight activities and diversification.

All the companies that have become less unrelated the last ten years use strategic foresighting activities. A possible explanation of this might be that by using foresighting activities, the companies see and closely experience the high uncertainty in the environment and the vast possibilities that exists. Further they realize that they are not capable of handling all the overwhelming opportunities and instead they decide to focus on what they now best and on what separates them from the rest; namely their competitive advantage. The companies might thus start to focus on their core competences and the development of these, and leave the unrelated business areas that do not

contribute to what the company has discovered to be their competitive advantage. Strategic foresight may in this way be used as a risk reducing strategy and a quality assurance procedure.

Looking at the group that have strategic foresighting activities versus those who don't, it is found that there is less diversification among the companies who use strategic foresight, compared to the rest of the case companies. The point mentioned earlier where the companies using strategic foresight are put off by the large uncertainty and vast opportunities, so they hold back and focus on what they now, might explained this. Whilst the companies that do not use foresighting activities might be less knowledgeable about the breadth of the uncertain environment and put less emphasis on the environment when making strategic decisions. They might be more focused on leveraging and developing their current internal resources, compared to the external potential in the market. This can be supported by the findings from the market entries, as the companies that do not use any strategic foresight activities are more affected by internal factors when entering a new area, whereas the ones using strategic foresight are more influenced by external factors.

Ownership and diversification

From the findings, there is a connection between the amount of diversification and the number of owners. Looking closer into the companies that have not increased their diversification the last ten years, reveals that all of these companies have relatively dispersed owners compared to the other case companies. Their owners fall within

the group with the highest number of owners, as shown earlier in Table 2 in Chapter 7. On the other side, all the companies that have less than five owners have increased their diversification during the same time period. Based on this, it might seem that there is a connection between the number of owners and diversification, where dispersed owners are related to little diversification and concentrated owners are related to more diversification.

This however, is in contradiction to Hoskisson and Turk's (1990) theory, which claims that companies with dispersed owners may be receptive to more diversification, compared to companies with highly concentrated owners. This is because it is harder for dispersed owners to control and monitor the management, who would prefer increased diversification as it provides an opportunity for increased compensation. An explanation for the contradicting findings can be that for the managers, diversification represents something new, difficult and risky, as the companies in the industry are not accustomed to changing and trying out new areas. The managers may be reluctant to diversify, as it may harm their compensation. In this situation the owners might play an opposite role, where they are not holding the company back from diversification, but rather encouraging diversification in the direction they wish. It would be more difficult for dispersed owners to encourage and push the company into diversifying, as it according to agency theory, will be harder for them to influence and control the managers, compared to more concentrated owners. In this way, companies with many owners

may have less diversification compared to companies with fewer owners.

Looking at the factors that have made the case companies enter new areas supports this argument, as all the companies with a low number of owners have stated that they have been affected by ownership. Further, all the companies that have not mentioned ownership as a factor, have many owners. From the case studies, it is clear that the owners have encouraged companies to diversify, as the CEOs in many situations say that they wouldn't have diversified if it weren't for the owners.

Many of the business areas that the owners have encouraged, revolves around socio-critical tasks, which public owners consider beneficial. A special notion about this industry is that the owners are mainly public owners. If, however the owners would have been private, we might not have seen the same encouragement and pushing into diversification.

From the case studies, it also seems to be a correlation between focusing on being a social actor and diversification. The companies that highlight their role as a social actor have diversified more, compared to the companies that claim to focus more on maximising the profit. This may be seen in light of the notion that focusing on being a social actor is often related to having few owners. In this way

the argument related to ownership might explain this connection as well.

Size and diversification

Based on the case studies, a relation between the diversification and the size of a company is found. The smallest half of the case companies has in the last ten years become more diversified than the largest half.

This is in contradiction to Dyl's (1988) theory which suggest that the larger the firm, the more diversified it will be. An explanation for this finding may be that facing an uncertain future the small companies might feel a stronger need to obtain several feet to stand on, as they have a smaller financial capacity to deal with large changes in their existing businesses. The larger companies might think that it will be very hard to build up a new business area that can handle a decline of one of their existing, large business areas, as the new area needs to gain a considerable size to manage this. Building a large new business area may be difficult, and the companies might consider it to be better and less risky to focus on developing and keeping their existing business areas.

DISCUSSION

ANSWERING THE PROPOSITIONS

The propositions, introduced in Chapter 4, will in this section be discussed and answered. To answer the propositions the industry review, the findings from both case studies and cross-case analysis, in addition to the theory, will be utilized. The propositions will be answered in the same order as they were introduced, one through six. When answering each proposition, the proposition is first repeated, before the purpose of the proposition is presented. Following, the findings are laid out and discussed in relation to the proposition, to see if the proposition is supported or contradicted. At last, theoretical implications with some areas for further research are presented. This is the pattern for all of the six propositions

9.1 PROPOSITIONS ABOUT ENVIRONMENTAL UNCERTAINTY

In this section propositions 1 and 2, which regards environmental uncertainty and strategic foresight will be answered.

9.1.1 PROPOSITION 1

P1: The Norwegian power companies will experience high environmental uncertainty.

The object of proposition 1 is to determine whether the companies experience a high level of environmental uncertainty.

A high rate of change is expected in the Norwegian power industry in the near future, due to the fast technological

development, increased customer power and political influences, as elaborated in Chapter 5. The fast technological developments open up for smart home solutions and for localized production, where every consumer can start producing their own power. At the same time the government wish to restructure the entire power production area as well as opening up the power sales segment even further. In addition, the interest in the society is increasing and the focus on being energy efficient and environmentally friendly increases. These are examples on how the environment around the case companies are changing and the different pressures they face. The changes are coming in all the three main business areas, and the pressure for change comes from different directions. The complexity in the companies' environment is increasing and the uncertainty can therefore be categorized as high.

The case studies indicate that the companies have insufficient information about the future of the industry and the future of their own company. All the CEOs believe that the future will bring many changes to the industry, but they don't know what the changes will be, when the changes will come or what the consequences will be. All the types of uncertainty, including state-, effect- and response uncertainty, are perceived as large. The companies don't know how the different components in the environment will change, thus the state uncertainty is great. There is also great uncertainty

around how the competitive situation will look in the future, as there is a chance that new actors will enter the market. The case companies express great suspense about whether they will be able to compete in the emerging markets and how the various changes will affect the existing companies. This situation contributes to a large effect uncertainty. Lastly, the response uncertainty is also perceived as high. Since the companies have limited information about the future and the state- and effect uncertainty is great, it would be difficult for them to know how to respond and make the appropriate choices to prepare for the future. Since the state-, effect- and response uncertainty are perceived as great, the total uncertainty that impacts the companies is regarded as high. This supports proposition 1.

Implications for theory

From our findings, it is suggested that the actors in the Norwegian power industry are facing high environmental uncertainty. Theory on environmental uncertainty has been utilized to confirm the uncertain future, in order to support the analysis regarding strategic foresight and diversification, which assumes an uncertain environment. Thus, the findings support the arguments that may give implications for the theory on strategic foresight and diversification.

Further, the findings seem to support Duncan's (1972) theory on environmental uncertainty, as the interviewees portrait the uncertainty in the same dimensions of uncertainty as was proposed in his model.

9.1.2 PROPOSITION 2

P2: It is expected to find a high degree of variations in the usage of strategic foresight activities among the actors in the Norwegian power industry.

The purpose of proposition 2 is to see if strategic foresight activities are used in the Norwegian power industry as a tool to handle the uncertain future.

The cross-case analysis reveals that the focus on strategic foresight is varying among the companies, and only a minority of the case companies use it. Further, within the companies that use strategic foresight activities, the variation is great. The two dominant approaches; the planning- and the adapting approach, are both present in the industry. A few of the companies have formalized processes that are embedded in the company, which focus on strategic foresight activities and coincide with the planning approach. They try to foresee the future and position themselves accordingly by for example investing in new emerging areas. Others have chosen an intermediate approach and carry out projects to keep up with the development in the market, but they don't act on the predictions. While some of the companies that use foresight activities, do the minimum amount of activities in order to be able to react and adapt if the market or some of the other companies change. However, they don't want to or don't have the capacity to be the first mover. This shows the variation and the differences in how formalized and organized the foresighting activities are.

The majority of the companies however, don't use any form of strategic foresight

activities. From the cross-case analysis, it is suggested that the actors in industry might not be as incentivized as other companies operating in a free market, to understand the future. This may be because the industry is heavily regulated and some of their operations are thus protected in a way. All in all, the usage of strategic foresight activities among the actors in the industry is highly varying and not widely spread among the companies. The discussion above supports proposition 2.

Implications for theory

There is mixed support for strategic foresight in our empirical evidence. This may contribute to the on-going theoretical discussion regarding the divergence in strategic foresight. Strategic foresight has become more popular the later years, but our empirical findings show that the companies in the Norwegian power industry aren't major users of it yet. The findings can thus only give mixed support for the view that promotes strategic foresight, endorsed by among others, van der Heijden et al (2002).

Strategic foresight has also been criticized of focusing too much on planning, compared to being adaptive. This issue isn't evident in this case, and the findings don't give full support to the criticism. Several of the companies that use foresighting activities, do so in order to be able to react when the situation requires it. This may imply that foresighting is not all about predicting the situation and planning based on this, it is also about being able to adapt. This support Tsoukas and Shepherd's (2009) theory that claims that the goal of strategic foresight isn't to

predict the future, but preparing to deal with the future.

9.2 PROPOSITIONS ABOUT DIVERSIFICATION

In this section propositions 3, 4, 5 and 6, which regards diversification will be answered.

9.2.1 PROPOSITION 3

P3: The actors in the Norwegian power industry will have varying degrees of diversification.

Proposition 3 aims, by looking at the diversification among the actors in an industry, to see if the vast and inconclusive literature on the topic is reasonable. Most importantly it seeks to find out if and to what extent diversification is a strategic move used by the companies in the industry.

After our first step in the selection process, it was evident that the industry actors had large differences in the number of business areas they were present in besides the industry's three main operations. This difference is also clear in the selected case companies.

A great portion of the companies are involved in one or no additional business units. Limited diversification can therefore be said to hold for many companies in the Norwegian power industry. However, there are a large proportion of the companies that are in several additional business areas today. Based on this it seems that the firms in the industry have a great variance in the degree of diversification, and that they have different beliefs about whether a focused or diversified strategy is

preferable. Based on this proposition 3 is supported.

The argumentation for proposition 3 was also based on theory, which stated that companies with dispersed owners might be receptive to more diversification, compared to firms with highly concentrated owners. This argument however, is not supported from our findings. The findings contradict the existing theory, as it suggests an opposite relationship between the concentration of owners and diversification.

Implications for theory

As shown in Chapter 3, the literature on diversification is broad, but there is still a high degree of inconsistencies and disagreements among researchers. One of the basic discussions in the literature is regarding whether or not diversification is beneficial, or if for instance a focused strategy could be just as good. The interview findings show that there are varying degrees of diversification across the companies in the industry. This may imply that a focused strategy and a diversification strategy both can be supported by the actors in the industry. However, as the diversification have increased among the case companies, our findings may seem to support Gort's (1962) view that diversification is better than no diversification.

We believe that future research in this field of theory should look at diversification from the companies' perspective. Especially to look at the companies' strategic reasoning for diversification and to see if it is a part of a long-term plan or if it is more emerging as the company

develops. From the case companies it is clear that some evaluate each opportunity as soon as it is found or presented to them, while others have a clear strategy for long-term diversification and actively seek for new areas.

Our findings further contradict Hoskisson and Turk's (1990) theory regarding the relationship between the concentration of owners and diversification. Further research should therefore look more closely into the topic of ownership and diversification and examine different factors related to ownership. Interesting factors to look at would be the difference between private and public owners and the board's degree of professionalism.

9.2.2 PROPOSITION 4

P4: Among the actors in the Norwegian power industry there will be a development towards more diversification, and the diversification will mainly be in the unrelated direction.

The purpose of proposition 4 is to unveil how diversification among companies change, when faced with an uncertain future.

As shown under the cross-case analysis, all the case companies have entered new business areas the last ten years. This may indicate that obtaining new areas and thus getting additional feet to stand on are considered a reasonable approach in an uncertain environment. This view is also supported by the total development among the companies in the industry. A great majority of the case companies have entered more business areas than they have

left, in the last ten years. These findings support the theory that claims that encountered with an uncertain environment diversification may be a good approach to reduce the uncertainty of future cash flows. Based on the development among the case companies, it is suggested that they have moved toward more diversification and this might be explained by the wish to secure future cash flows.

When entering new business areas, the case companies enter unrelated and related areas almost equally. This may imply that businesses facing an uncertain future will not have more interest in unrelated areas, compared to related ones. This does not support existing theory, which claims that companies experiencing an uncertain future are likely to mainly diversify in the unrelated direction. Also when looking at the market exits, the companies have mainly left unrelated areas. This suggests that for the actors in the Norwegian power industry, related diversification is more attractive than unrelated diversification, even though they are faced with an uncertain future. By looking at the total change in the companies' business portfolio, the majority of the companies have become more related and not more unrelated in their diversification the last ten years. These findings are in contradiction to the last part of proposition 4.

Based on this discussion, the first part of proposition 4 is supported, as the companies have moved towards more diversification. However, the second part is contradicted, as the companies mainly diversify in the related direction.

Implications for theory

The discussion above reveals that the development among the actors in the Norwegian power industry has moved towards more diversification. Thus, supporting Hoskisson and Hitt's (1990) theory that companies will tend to diversify when faced with an uncertain future.

However, the findings contradicts an extensive stream within existing theory, as the companies move towards more related diversification, instead of unrelated diversification, when faced with an uncertain future. Our findings therefore clearly contradicts Galbraith et al's (1986) theory which states that a company faced with an uncertain future environment, is more likely to diversify into other areas that are not dependent on each other.

Our findings contradict the theory and further research should look closer into why companies rather choose to go into related areas, when the environment is uncertain. Future research should also look at diversification across several industries which face major changes, to reveal if this pattern is industry specific or not.

9.2.3 PROPOSITION 5

P5: Both internal and external factors will influence the Norwegian power companies' choice of entering and exiting different business areas.

The purpose of proposition 5 is, by analysing the factors influencing the companies' different entries and exits, to figure out if both internal and external factors equally influence the choice to

diversify or if one of them is overrepresented.

The cross-case analysis reveals that the factors influencing the entries and exits of the various business areas are both external and internal. However, by looking at the total, both the entered, evaluated and rejected and exited areas, it is clear that internal factors have influenced more of the decisions, compared to external factors.

Internal factors are most significant in all the three situations, however the relative importance varies. When entering an area the internal factors are in a small majority. This could indicate that the companies are trying to balance the need for market adaption and resource leveraging. However, when rejecting an evaluated area or exiting an area the majority of internal factors are great. As the companies' external environment is uncertain and the theory emphasizes that companies need to continuously match their environment, it would be reasonable to suggest that the companies in their situation would be heavily influenced by external factors. However it seems that the companies take an inside-out approach and focus on their existing resources, especially when rejecting and exiting businesses areas, instead of focusing on the external factors and adapting to the environment.

Both internal and external factors, where the internal factors are most prominent, have influenced the companies' choice of altering their business portfolio, which supports proposition 5.

Implications for theory

Our observations are mostly in line with the theoretical foundation. However, it is clear that the case companies more often have internal considerations when entering or exiting a business area, which might support the theory that a company should focus more on developing their resources, than focusing on following the market.

Further research should investigate the pattern that internal factors seem to be most influential, particularly when leaving a business area. It would be interesting to find out if this is an industry specific pattern or not. To understand this pattern, it would be beneficial to research if the companies make a conscious choice to emphasize internal or external factors or if the choice is just coincidental. If the choice were deliberate, it would be interesting to look closer into the companies' reasons for preferring one factor over the other.

9.2.4 PROPOSITION 6

P6: There is no difference in performance between diversifying in the related or the unrelated direction among the actors in the Norwegian power industry.

The aim of proposition 6 is to find out if there are any differences between diversifying into unrelated versus related areas, as there is a large and inconclusive discussion on the field among researchers.

The case companies have entered approximately the same amount of related and unrelated business areas, while there are large differences when it comes to the market exits, where the companies mainly have left unrelated business areas. Based

on this, unrelated diversification seems to give a lower performance than related diversification. If the performance connected with the two were equal, the number of exits from unrelated and related areas would probably be more similar. As mentioned in total, most of the case companies have become more diversified in the related direction the last ten years. This development may also imply that related diversification is superior to unrelated.

Based on the existing theory about diversification in an uncertain environment, the companies in the Norwegian power industry would be expected to especially benefit from unrelated diversification compared to related diversification. Regardless of this, the findings seem to support related diversification compared to unrelated diversification. This may indicate that the benefits from unrelated diversification, like financial synergies and risk reductions, are not as great as suggested by the authors supporting the intermediate model, which claims that related and unrelated diversification is just as good. Even though the companies spread their risk and try to explore new business areas, entering into new unrelated markets might include a big risk, as the companies may not have any knowledge regarding the market or the resources required in the new area.

The companies in the Norwegian power industry have to, in addition to any new business areas, attend to their socio-critical tasks, such as power production and power distribution. The companies' competences will revolve around these operations regardless. This industry characteristic might explain some of the popularity of

related diversification. The companies in the industry need to maintain and develop the resources regarding the socio-critical activities irrespectively and entering new business areas that can make use of these competences and help developing these resources further, could provide synergies. Some of the companies' resources must remain on the socio-critical tasks, and this could be an anchor that prevents the companies from being able to develop in other directions. This constraint may make exploration through unrelated diversification less attractive, as it may be difficult for the company to move in a new direction while also performing their socio-critical tasks.

However, diversification in the related direction may have received some undeserved support in the findings, compared to unrelated diversification, as companies may have diversified into related areas because they believe it is safer, not necessarily because it will have better performance than unrelated. The majority of the owners in the industry are public, and the dividends are often a significant part of a municipality's budget and a necessity for the budget to go up. The owners can therefore be thought of as risk averse, and because related diversification may seem like a safer choice, it will be well received by the risk averse owners. The superiority of related diversification might be overrated, but it is still believed to be significant, based on findings that clearly state that the companies seem to favour related diversification.

The discussion above reveals that unrelated and related diversification is not just as good, as related diversification seems to be

better than unrelated diversification. Based on this, proposition 6 is not supported.

Implications for theory

Our findings are not in line with the intermediate model, which states that unrelated and related diversification are equally good. Instead the findings suggest that related diversification is better than unrelated diversification. Additionally, it seems like related diversification is better than no diversification when facing an uncertain future, as the main part of the case companies have increased their diversification in the related direction during the last ten years. Based on this, the analysis of the actors in the Norwegian power industry seems to support the inverted-U model, where related diversification is preferred.

Further research should try to reveal under which situations the relationship suggested by the findings might hold, where related diversification is preferred over unrelated diversification. It should be investigated if this is only the case when faced with an uncertain future or if other situations can be just as encouraging for diversification.

Our findings support the inverted-U model, but the performance dimension in the model has, in this thesis, been assumed from the business area entries and exits. Further research should therefore conduct a more quantitative research with other methods of measuring the performance dimension.

9.3 SUMMARY OF THE ANSWERS TO THE PROPOSITIONS

In the previous sections we have analysed our theoretical propositions, and proposed theoretical implications. A summary of how the different propositions have been evaluated and a revised illustration of our propositions will now be presented. For an overall conclusion to the research questions, we refer to the conclusion.

In the revised illustration shown in Figure 15, propositions that are partially supported are made transparent, while propositions or parts of propositions that have been rejected, have been filled with red colour.

We initially proposed, in proposition 1, that the actors in the Norwegian power industry perceive the future as uncertain, and thus experience high environmental uncertainty. This proposition is supported, as all the interviewees believe that the industry is facing relatively rapid changes with a high complexity.

Proposition 2 was evaluated and found to be supported, as the companies show large variations in the use of foresighting activities. Within the minority of the companies that use foresighting activities, there is also great variance in what way foresighting activities are used.

Based on the findings and the discussion, proposition 3 is supported, as the case companies show a varying degree of diversification. However, the argument based on Hoskisson and Turk's (1990) theory that dispersed owners may be receptive to more diversification, compared to firms with highly

concentrated owners, is contradicted by the findings.

Proposition 4 is partially supported, as the first part of the proposition is supported, while the second part is rejected. The findings suggest that the diversification have increased among the case companies the last ten years. However it has mainly been in the related direction and not in the unrelated direction, which the proposition originally suggested. This clearly contradicts Galbraith et al’s (1986) theory, as the findings show an opposite relationship compared to what was proposed.

Proposition 5 is supported, as the findings show that both internal and external factors affect the companies’ decisions when

entering, rejecting and exiting different business areas. However, for each of the three types of decisions internal factors are in majority. When rejecting and exiting a business area, the majority of internal over external factors are great, which might suggest that internal factors are more important for the actors in the industry.

Proposition 6 is not supported. From the findings and the discussion it seems like related diversification is better than unrelated diversification, while the proposition stated that there was no difference between the two.

Together, this leads to following illustration of the propositions as shown in Figure 15.

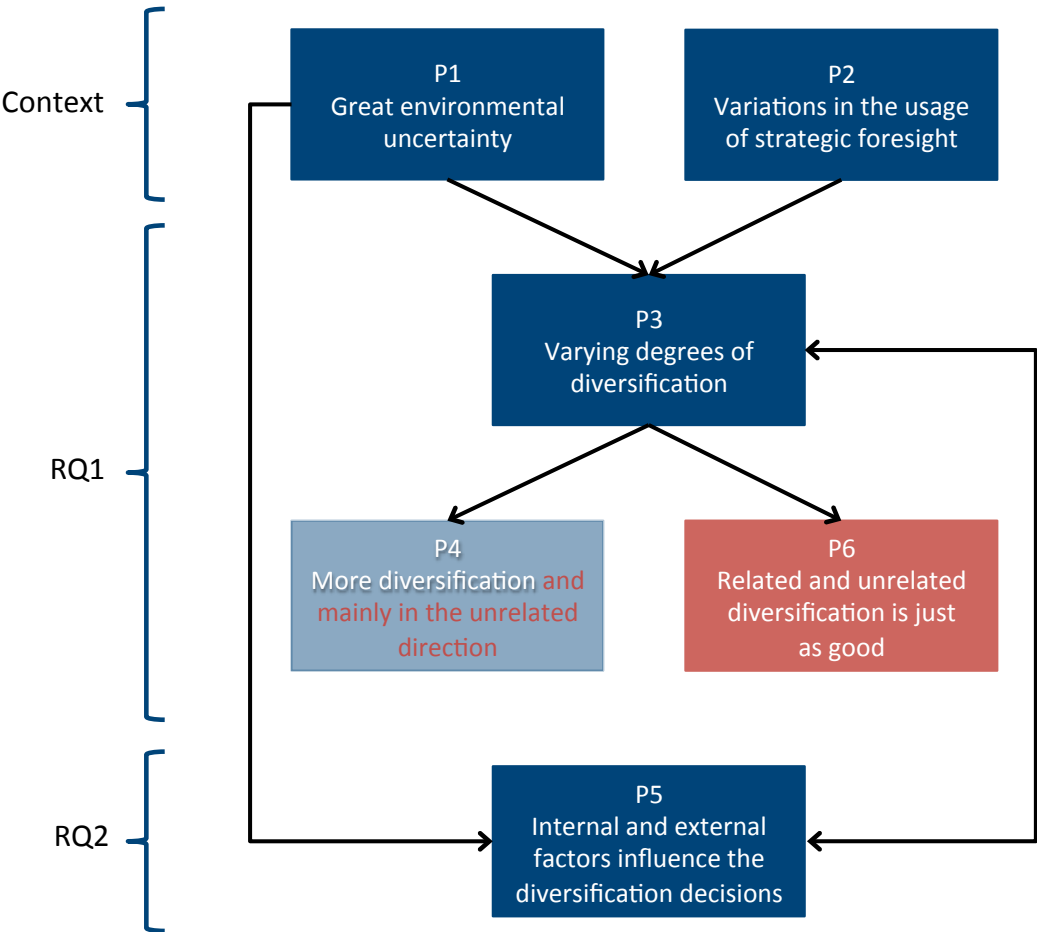


FIGURE 15: ANSWERING THE PROPOSITIONS

CHAPTER 10

IMPLICATIONS FOR STAKEHOLDERS

In the following chapter, implications for managers and policy makers will be presented.

10.1 IMPLICATIONS FOR MANAGERS

The study reveals that the companies in the industry have different objectives for the future, as some wish to maintain the companies as is, while others seek to grow. If a company wish to grow, it would be hard to grow organically within the core, as the margins on power are low, the grid operations are regulated and all the larger hydropower development is completed. It could be possible to grow by acquisitions of other power companies, however this potential is limited and is mainly attainable for the largest actors. By doing this, the company would not achieve any new competence and would still struggle if large changes occur. Another option for the company that has an ambition to grow is to diversify their business portfolio. This study argues that diversification is favourable compared to no diversification if company is faced with an uncertain future. If the company has growth ambitions, the managers must thus diversify the company's business portfolio.

The questions then arise on how the company should diversify. The company needs to secure its profitability in the long run so that they can be able to deal with changes in their current core businesses. The findings suggest that the growth of the business portfolio should be in the related

direction, into areas adjacent to the core business. In this way the company can gradually develop their competences, and become better equipped if changes occur. It is important that the business portfolio is balanced, to spread the risk and secure future cash flows. The portfolio should thus include the core business, adjacent business areas with related competences and possibly unrelated business areas. The findings show that unrelated diversification has high risk and often fail, and it is thus not sufficient to just diversify in this direction. Based on the study, an implication for the managers is that they must ensure that the company first and foremost diversify in the related direction and gradually build on their core competences, to secure future cash flows, and have reliable business areas to stand on if today's core businesses decline and become unprofitable.

Based on this, if the company seeks to grow, the managers should develop a method for screening, choosing and developing new related business areas. The managers must ensure that the company is able to deal with the new related areas, and they must thus build and develop their capabilities and their capacity to change and innovate.

10.2 IMPLICATIONS FOR POLICY MAKERS

The policy makers wish to consolidate the companies in the industry and have fewer, larger actors. However, from the findings it is found that smaller companies diversify

more compared to larger companies. By consolidating the companies, some scale efficiencies may be obtained and the industry may be easier to control. However, the findings suggest that it will not make the companies better equipped to develop and face the uncertain environment, as larger companies diversify and explore less compared to smaller firms. A greater size doesn't enhance the companies' abilities to innovate and change and the policy makers must therefore implement other initiatives to make sure that the industry can meet future changes.

Many of the interviewees imply that they are unlikely to undertake any major changes before they are imposed by regulation to do so. As the industry has been heavily regulated for a long time, the companies might not be equipped and able to change. The policy makers should therefore consider aiding and supporting the companies to deal with the changing environment. Further, the findings suggest that the companies mainly change their diversification based on internal factors. Thus, if the policy makers wish to increase innovation and diversification in the industry, it is not sufficient to invest in

research of external possibilities. They should also help the companies by investing in the development of the companies and their capabilities to change and adapt to new possibilities. The existing companies, might not be best suited to lead the development in all the business areas in the industry, as other actors may be able to do it better. The policy makers should therefore also focus on aiding other actors as well, not just the existing power companies, to secure future development of the industry.

From the findings it is found that ownership has a great influence on the companies' decisions to change their diversification. The majority of the owners in the industry are public, and they rely on secure and large dividends for the public budgets. They may thus not be that willing to explore new business areas, in comparison to for example private owners with lower return requirements and a greater willingness to take risks. The policy makers should therefore consider opening up for other ways of financing the development of the industry, in order to build an industry that is capable of meeting future changes and challenges.

LIMITATIONS AND FURTHER RESEARCH

In this section the limitations of the thesis will be discussed before moving on to areas for further research.

11.1 LIMITATIONS

The findings from our research are based on the actors in the Norwegian power industry, which is a regulated industry. The generalizability across industries may therefore be limited. However, our research questions are interesting for more than the specific industry, so the findings may be relevant to some extent.

Our sample of case companies is made with a desire for heterogeneity. The first sorting we did, as explained in Section 5.1.2, revealed that there was an uneven distribution of companies in the different groups, which were defined by the number of business areas. We chose a purposive sample with the same amount of companies to represent each group and the sample is therefore not representative by quantitative measures. However, we believe that using purposive sampling was the best call for this thesis, as we wanted to ensure that we covered the existing variations and differences in the industry.

Throughout the research we have defined several terms and concepts. One of the key concepts we defined were the different factors we used to explain the decision to diversify. The factors were created and defined during the analysis of the interview transcripts and we conducted the coding

process, using both subjective and collective review. However other researchers may conduct the coding process differently and be left with other factors.

The categorization of related and unrelated business areas were based on our understanding of the activities and resources used in the various business areas. We categorized the business areas as related if some of the core resources were overlapping. The business areas were in turn categorized as unrelated when we didn't see evident connections to the core competences. However, our understanding of the activities and the resources used might be superficial and not in line with the actual operation of the business areas. We tried to diminish this limitation by contacting experts on the field, when we were in doubt, and got guidance from them to make sure we categorized the business areas realistically.

The study has been focused on the connection between the uncertain environment and diversification. However there might be other reasons besides environmental uncertainty that have influenced the companies' decisions to diversify. It must therefore be taken into consideration that the link between environmental uncertainty and diversification might not be as evident as it seems to be in this thesis.

11.2 FURTHER RESEARCH

Our thesis has focused on the change in diversification and why it has changed for the actors in an industry facing an uncertain future. Our findings have given support to theory, by confirming that when faced with an uncertain future, diversification is the preferred approach. However, the theory on whether diversification is better than no diversification is inconclusive and there is need for more empirical evidence supporting the theory. It is also a need for further research on the link between environmental uncertainty and diversification, to find out how much environmental uncertainty affects the companies' decisions to diversify, compared to other reasons.

The scope for this thesis was ten years, further research should broaden their scope of research and collect data from both historical data further back in time and also have a longer time horizon on the research. In this way it will be possible to examine the consequences of the decisions and see if the outcomes of diversification are as predicted.

Researchers should further investigate if our findings can be replicated for other

industries. The Norwegian power industry has some special characteristics like the relatively high level of regulations and high degree of public ownership, and it would be valuable to replicate the research covering several industries, to investigate whether the results are industry specific or not.

This thesis has focused on qualitative characteristics and heterogeneity in the sample of case companies. However, it would have been interesting to investigate the research questions more quantitatively, by for example conducting a survey for the whole industry and figure out if the findings obtained in this thesis would hold for the entire Norwegian power industry. Further research should also conduct the same survey in other industries to determine whether the results are industry specific.

The sample in this thesis shows a slight correlation between size and diversification. This was, however not the focus of this thesis and further research should examine if the size parameter is a prominent issue regarding the companies' diversification decisions.

CONCLUSION

CONCLUSION

When faced with an uncertain future, strategic decisions regarding the composition of the business portfolio are of great importance for all companies. Based on this issue, the research questions, RQ1 and RQ2, were created. In this section, the research questions will be answered.

12.1 ANSWERING RQ1

RQ1: In what way does the diversification among the actors in the Norwegian power industry change when faced with an uncertain future?

When the uncertainty in the environment increases, the actors in the Norwegian power industry increase their diversification. Based on this it seems that diversification can be used as a tool to handle environmental uncertainty.

The companies have mainly diversified into related business areas. The study is therefore an important contribution to the theory on diversification, as it contradicts an extensive stream of theory, as the companies move towards related business areas when faced with an uncertain future, instead of following the theory and diversifying into unrelated areas. Based on this it seems that the companies focus on their existing resources, and not on what the future might require.

Even though the diversification among the companies in the industry increase, it seems like the current actors are not able to explore and lead the development of the industry in all the business areas. The companies also mainly diversify in the related direction, and it can therefore be questioned if they are capable of developing in new directions and thereby being able to meet the large changes facing the industry.

12.2 ANSWERING RQ2

RQ2: Why do companies in the Norwegian power industry enter and exit different business areas?

Norwegian power companies enter new business areas mostly due to new opportunities and ownership governance, and exit business areas because of changes in strategy.

Overall, the factors influencing the companies' decision to change their diversification could be divided into internal and external factors. The findings show that internal factors are more prominent compared to external factors. Based on this, it actually seems that it is more important for the companies to leverage existing resources than it is to adapt to the market.

The decision to diversify is often affected by the owners, and the study shows that companies with more concentrated owners diversify more than the ones with

dispersed owners. This contradicts the theory on the link between ownership and diversification, which claims that companies with dispersed owners diversify more. Further, the companies are often affected by the owners to enter socio-

critical operations, as the owners are mainly public. Public owners, especially the concentrated ones, may thus make companies diversify into unsuitable areas.

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APPENDIX 1: INTERVIEW GUIDE

The interview guide is presented in Norwegian.

INTRODUKSJON

Denne intervjuguiden er ment for telefonintervju av 15 norske kraftselskaper, i forbindelse med masteroppgave på NTNU våren 2015.

Dette er intervjuguide til et semistrukturert intervju, hvor det er en del spørsmål som skal dekkes, men intervjuobjektet har frihet i forhold til hvordan å svare.

Intervjuet er delt inn i to deler, en om fortiden og valg dere har gjort tidligere og en del om hvordan du ser for deg fremtiden til selskapet.

I løpet av intervjuet er vi i hovedsak interessert i å finne ut hvilke forretningsmuligheter dere har vurdert, hvorfor dere har valgt å gå/ikke gå videre med det, og hva som har påvirket dette valget. I tillegg vil vi undersøke hvorvidt dette har hatt en innflytelse på kjernekompetansen til selskapet, og hvordan det kan utvikle seg videre.

Intervjuet vil vare i rundt 30 minutter.

INTERVJUSPØRSMÅL

Fortid og tidligere valg:

1. Har dere i løpet av de siste 5-10 årene gått inn i noen nye forretningsområder?
2. Hva var det som gjorde at dere bestemte dere for å gå videre med det?(For hvert område)
 - a. Hvilke faktorer påvirket dette valget?
3. Har dere utforsket noen forretningsområder, som det ikke har blitt noe av? (Har de følerne ute for nye ting.)
4. Hva var det som gjorde at dere bestemte dere for å ikke gå videre med det?
 - a. Hvilke faktorer påvirket dette valget?
5. Har vurderingen av ulike forretningsområder vært en del av en overordnet strategi, eller har det oppstått mer spontant?
6. Hva definerer du som bedriftens kjernekompetanse?
 - a. Hvordan har dette utviklet seg de siste 5-10 årene?
 - b. Hvordan ser du for deg at kjernekompetansen utvikles fremover?

Fremtid

7. Hva er strategien deres fremover?

- a. Hvilke forretningsområder kommer til å bli viktige for dere i fremtiden?
8. Hvilke forretningsområder ser dere for dere å være i? Gå inn i nye områder, gå ut av eksisterende områder, fokusere på dagens områder?
 - b. (Kommentar til oss: fokus på kundeorienterte områder, eller ikke?)
9. Hvordan utforsker og utvikler dere nye forretningsområder?
10. Med den informasjonen du sitter på i dag, kan du si noe om hvordan du tror den norske kraftbransjen kommer til å se ut fremover?