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DYNAMIC CAPABILITY INFLUENCE ON STRATEGIC AGILITY: A CASE STUDY IN ENERGY CONSERVATION INDUSTRY

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ABSTRACT OF THE MASTER'S THESIS

The thesis examines the influence of dynamic capabilities on strategic agility in a dynamic industry. The study considers what types of capabilities influence strategic agility of the case companies and in what ways. The study is connected to the theory discussions on strategic agility and dynamic capabilities in the field of strategic management, also connecting to issues in international business and management.

The study was a personally built case. The subject arose from the theoretical issues and was linked to companies in a dynamic field which was found from energy conservation industry. Two executives from two companies were interviewed during December 2013 and January 2014. The interviewees were of executive or management positions in the companies. The interviews were completed through a half structured format to complement a case study method of research.

The results showed that dynamic capabilities and strategic agility and be combined in international business study. The research showed that capabilities and dynamic capabilities do influence parts of strategic agility in the case companies. It was possible to present the results in figure form as well. In the thesis the companies were mainly analyzed separately but the influence on strategic agility came mainly from production concepts, sales organization and product development. It was understandable for Finnish companies that their dynamic capabilities were linked to product issues. Strategic agility which was affected by these dynamic capabilities was mainly on agility towards customers, reactivity to market changes and abilities to deliver tailor made or at least highly customized solutions to customers.

The main contribution to managers was that despite the high velocity or dynamism in market, the changes and agility must be in a controlled way to ensure enough consistency in business. Reacting and moving all the time is difficult and costly which is why there must be careful consideration on which strategic opportunities and threats are pursued or countered.

The information on market dynamism and demands of strategic agility should be constantly evaluated in companies. There must be careful evaluation of what can be pursued and to what extent. The information flow and learning from it must be acknowledged in dynamic energy conservation industry, where development through routines also plays an important role for case companies.

The results were understandable and reasonably reliable in the context of this thesis. The methods used in the work created different types of useful ideas and can be utilized to an extent in case companies. The thesis does not aim to generalize to a larger context.

Keywords
dynamic industry, operational capability, routines, learning

Additional information
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1 INTRODUCTION AND RESEARCH QUESTIONS

1.1 General Introduction to the Industry

An important industry at present and in the future is energy conservation and construction technology. The field is continuously growing in importance even for individuals as prices for heating and electricity have been growing recently. I found that many companies have developed different energy saving solutions for various purposes. These include options for detached houses, flats, companies and industrial needs. New technological devices can for example closely follow temperatures inside flats to determine heating needs, not just by outside temperature (Tuomikoski 2014). This thesis has looked into some of these energy saving technology companies on a subject based on international business and strategic management theory.

The practical motivation in this thesis comes has grown on me through this process. It has been good to research a field with which I had previously no assumptions or much information on. The amount of business in this field was a surprise as was the amount of varying technology and types of companies in it. Due to the selected subject however, this was not a problem as companies were questioned on their strategic matters mostly. I could also make a fresh analysis on them on this no assumptions basis. It was also nice to see that energy conservation as a field is so important nationally and even globally. Energy conservation generally was highlighted as one way to halt climate change in Finland’s energy vision 2030 (Hirvonen 2003: 5) and the potential for the energy conservation industry was highlighted (Energy Visions 2050 2009: 8) by statistics which showed an enormous potential for energy efficiency development is some major industries; the market is there for these companies. Not to mention huge potential in international markets where case companies also operate in. Many Eastern European countries are still in the development phase of their energy conservation legislation (Executive B) which will bring further possibilities to Finnish companies.

This thesis is an attempt to understand and analyze some parts of this field of business. The first important concept in this thesis is strategic agility of the business, which was originally the first thing to come up in the planning for theoretical
structure. What parts of the business provide the needed flexibility for competing in a fluctuating world and how these can possibly be measured? One could assume a large and mature company would find it difficult to develop capabilities and be agile enough after a long investment in a particular strategy. On the other hand, a reasonably new company might not have capabilities which could provide strategic agility. From an outsider’s point of view, this seemed it could be problematic with not so much ability for agile movement. These questions provided a starting point.

Energy saving and construction is a mature field of business (Executive A) but also dynamic. Different directions and service and product options the new millennium has brought to the field have made the industry dynamic. According to the interviewed executives, European Union is the main outside influence on the development of the field with EU’s directives and regulations which have been developed although there is plenty of government influence on the field as well, especially abroad (Executive B). Much of the market dynamism in the field comes from the companies’ actions however. There have been acquisitions and mergers too which have added to the movement in the field.

Energy and energy conservation is also a very much publicized and discussed business area. During the completion of this thesis most large national medias had some stories related to the subject. Helsingin Sanomat mentioned the new requirement for households to have an energy consumption meter installed which sends wireless information to energy companies on consumption (Lassila & Pölkki 2014). Same paper also reported a 9 percent increase of district heating prices during the year 2013 (Lassila 2014). Kauppalehti offered an encouraging view that energy business can bring export trade to Finnish companies in the near future, especially to the United States (Tammilehto 2014) although that nation is not particularly linked to this thesis.

1.2 Theoretical Focus

The theoretical motivation and issues of this thesis are centered on the concept of dynamic capability and, continuing further from that, strategic agility. It has been said that dynamic capabilities can function as a framework for agility (Roberts &
Strategic agility has also been noted as a dynamic capability (Goldman, Nagel & Preiss 1995; Sambamurthy, Bharadwaj & Grover 2003) but is viewed here as an operational capability to enable the research as follows in research question and methodology parts.

Strategic agility as a term has first been researched from manufacturing and workforce viewpoints among others, before extending the concept to cover whole company operations (Sherehiy, Karwowski & Layer 2007). Mason (2010) discusses theoretically similar issues as in this thesis, his aim being to research organizational agility as a dynamic capability for maintaining competitive advantage. Gardner (2004) focused on dynamic capabilities and the need to be flexible on subunit level activities in an organization. He examined, as this thesis will also partly touch, the factors related to operational flexibility with daily activities on subunit level. This thesis can be viewed as continuing this branch of research, albeit from a more narrow empirical material.

Though the dynamic capabilities research has been around for a good while, it is still very relevant to academic international business research. This has been shown by a recent doctoral work from Eriksson (2013) on dynamic capability of value net management. In terms of the dynamic capabilities research, the most quoted and therefore influential articles over time have been Teece, Pisano and Shuen (1997), and Eisenhardt and Martin (2000) ((Peteraf, Di Stefano & Verona 2013)), which is notable in this work as well in terms of the amounts of references to these articles.

Instead of dynamic capabilities, a resource based view could also have been utilized in this thesis but there is arguably a question mark over its suitability for highly changing market framework. Eisenhardt and Martin (2000) argue that resource based view does not hold in high velocity markets where the duration of a competitive advantage cannot be confirmed. Time itself is a big part of strategy in this case and as will be explained later, the dynamic capabilities which partly generate those competitive advantages are themselves unpredictable things.

Resource based view also does not offer much on how companies could add to their capabilities and build new ones. According to resource based view, resources and
capabilities are idiosyncratic but the dynamic capabilities view mentions that these can have some similar features in companies with idiosyncratic details. (Cavusgil, Seggie & Berk Talay 2007) Dynamic capabilities theory also focuses on the way companies can change and keep changing their valuable resources over time (Helfat, Finkelstein, Mitchell, Peteraf, Singh, Teece & Winter 2007, Ambrosini & Bowman 2009). It is good to point out here that not all actions taken by companies in responses to opportunities and threats can be dynamic capabilities (Teece 2009), often just business actions as such. It has been mentioned that companies can build capabilities and manage change without dynamic capabilities. (Helfat & Peteraf 2003) Another possibility of searching how companies cope with continuous and dynamic changes in their environments would have been using the strategic entrepreneurship theory more (Kohtamäki, Kraus, Mäkelä & Rönkkö 2012), though some of the issues the theory it covers are also intertwined with dynamic capabilities related works in my opinion.

This thesis is mainly looking at the whole company viewpoint of definition, even though many articles cited may have included only parts of a firm’s operation in their research. The strategic agility discussion has been going on from the early 1990s and is still going strongly, as will be shown in chapter 4. More generally, this is part of a large discussion in strategic management on how firms could improve and keep competitive capabilities and do well in international business. According to Helfat and Peteraf (2009), dynamic capabilities may not fill the requirements of a full theory and could be added to the field of change management. This is to acknowledge that there could have been options in terms of the theoretical focus in this study.

It is useful to look at the existence of dynamic capabilities in practice and if they are combined or operate one by one. This gap was originally identified by Ambrosini and Bowman in 2009 and is in my opinion closely linked with the research problem here: which types of dynamic capabilities operate possibly in connection with and influence strategic agility? The combination of these theories and influence from the first to the second one is seen as the gap of why it would be worth researching. It may also be worth noting if there are some dynamic capabilities with a case company which may have different effectiveness in different situations. This was also
Strategic agility has been discussed by numerous scholars, Doz and Kosonen (2008) perhaps bringing the whole picture together most precisely in their book. This thesis has also utilized works by Dove, Goldman, Vasquez-Bustello and Serkis, among others. The most important areas in my opinion are the definitions to the concept and the agility enablers which, as will be discussed later, often are linked to dynamic capabilities. This is one of the most obvious ways how these discussions are combined and combinable. Strategic agility could have been researched from other perspectives too, of course, for example a network perspective (Yang & Liu 2012). The research will in any case touch issues connected to companies’ networks.

In addition to the main theories of dynamic capabilities and strategic agility, this work includes some theory parts of organizational routines and organizational learning as well as change management. This is because the research problem requires closer attention to actions and requirements regarding internal work in companies. Also, as will be shown, these terms come up at certain subchapters related to the main theories.

Companies and managers are likely to at times do actions which inhibit the creation of dynamic capabilities, as external factors may also do, and this has also been noted by research (Eriksson 2013a). However, as this thesis examines a situation where there are already arguably some dynamic capabilities in place, this area is not as relevant here.

1.3 Research questions

This subchapter includes the research question and the supporting questions along with a short reasoning on the choices. As written in the thesis title, the research includes dynamic capabilities theory and its relation to strategic agility theory. The energy conservation industry is selected as the dynamic context industry where the research is done, on companies which do both domestic and international business. Therefore the main research question opens up as follows:
How dynamic capabilities influence strategic agility in the context of a dynamic industry?

The research question is based not only on its practical functionality in relation to the possibilities within a Master’s thesis but also on theoretical background. The overall theory focus was already explained in subchapter 1.2 but can be added to it here. It has been previously questioned and researched (Dangol 2012, Eriksson 2013a) whether a dynamic capability can influence a company’s performance through a review of an operational capability or attribute. This thesis focuses on a particular operational capability, strategic agility, attempting to fill a gap that way. It is always important for a company to reflect on how well they are prepared for changes of different types and how these possible changes will affect the company’s agility or competitiveness.

The following two questions have been placed to help the main research question. The first sub question is to collect issues which are connected to strategic agility. Out of the issues, dynamic capabilities will be attempted to be highlighted. The first sub question is set up this way to gain information on a number of things because, as will be mentioned later, it is very difficult to capture the actual dynamic capabilities in definition right away. Therefore normal, more easily identifiable processes like research and design, recruitment and training need to be examined at, especially processes which are named by the interviewed executives and how these affect strategic agility of case companies. Strategic actions are business movements which affect the company in different ways and here is needed the possible effects on companies’ strategic agility. For example marketing campaigns and sales styles can increase and affect strategic agility positively, or restrict it. This thesis mainly works on the potential positive impact of dynamic capabilities on strategic agility and actually there is a need to recognize as many issues as possible in the companies which develop and help strategic agility. This is why the first supportive question is molded as follows:

What processes or actions create or enhance strategic agility?
The second sub question is related to the second main theoretical concept which is the strategic agility but it can bring things up regarding the first one as well. It is included because much of the strategic movement in most companies is related to reactive or proactive business moves all of which may not be dynamic capabilities. It should bring up issues on the base of change management and how it is viewed as well as how much companies are relying on agility instead of effectiveness. Often changes must be made in advance of competitors, or in preparation for changes in customer demands and therefore the management’s anticipation qualities and information management will be crucial in order to develop capabilities in the right direction. Many changes happen in companies but here information is needed mainly on the planned ones and their effects on key capabilities of the case companies. It is an assumption here that dynamic capabilities cannot be successfully created, implemented or developed without information flows and anticipatory change management. This is all why there is a simple second supportive question installed here:

*How can companies prepare for and anticipate changes?*

### 1.4 Research Structure

In this thesis the first chapter is on the introduction. It aims to generally explain the phenomenon of required agility and capabilities in today’s energy conservation and building technology industry and some other practical motives for this thesis. Then it provides theoretical background and reasons for selecting the approach as well as some research gap. Finally the research questions are discussed, as well as shortly a couple of the main theoretical terms and their use in this thesis.

Chapter two discusses the conceptual theory of dynamic capabilities at length. The different types of streams of research are covered in an attempt to explain this sometimes very theoretical phenomenon. It attempts to bring the concepts and the ideas as comprehensible for readers.

The third chapter continues with theoretical background on agility as part of a strategy. As mentioned strategic agility is based and part of the dynamic capabilities
view but is handled in the third chapter first mostly separately. Then in the conclusions it is showed how these two theories can be utilized and are combinable as part of the same thesis.

Then the fourth chapter discusses research methodology to make the following chapters and their contents understandable. It outlines some of the techniques utilized in the empirical interview material and also presents the companies and executives who were involved, albeit in anonymity.

The fifth chapter presents and analyses the interviews’ results and compares those with some previous ideas and main theoretical points.

The final chapter six concludes the thesis, offers conclusion to the analysis and covers the research limitations. It brings up the key issues on research validity and reliability. Some suggestions for further research are made and the general topic and discussion concluded.

1.5 Key Terms

Agility and flexibility are used as very similar in this thesis, with no huge distinction between the two. Agility as the arguably wider concept in international business is preferred. Hezel (2004) distinguished flexibility as being a planned responsiveness to expected changes and agility as the capability to do well in constantly unpredictably changing markets.

Capability does not normally mean a single resource of an organization like employees or finances but a combination of resources which are processes like customer relationship or product marketing, for example. Organizational capabilities are collective in nature and can also happen on different levels of departments, countries or corporate, for example. (Schreyögg & Kliesch-Eberl 2007)
2 DYNAMIC CAPABILITIES

2.1 Definition of Dynamic Capabilities

This chapter opens up the dynamic capabilities theory and its definitions, foundation and micro foundations as well as some strategic management theory connected to this theory. Dynamic capabilities can be defined as “firm’s ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments” (Teece, Pisano & Shuen 1997: 516). Dynamic capabilities can be described in terms of which actions are taken to adjust a company’s resources into new forms of competitive advantage.

Teece et al. (1997) were one of the first to research the dynamic capabilities area. Dynamic capabilities as an approach focus on the development of management skills and combinations of other skills like structural and technical ones. Therefore the area is based on a number of different areas like research and development management, process development, technology transfer and intellectual property among others. Thus, often the ideas came from outside traditional economic approaches into strategy. The authors state that a dynamic approach can help creating a strategy theory which could provide businesspeople some idea on how to develop competitiveness in the long term and flexibility. This is another good example of why the theories in this thesis are possible to combine.

The word dynamic comes from the capacity to keep hold of competencies in a changing environment. It requires innovativeness to keep with technological changes and other future issues, as well as good timing and rapid actions. Then the word capabilities comes from strategic management’s role; the careful handling of internal and external skills, resources and competences to keep a business going in the changing environment. (Teece et al. 1997)

Dynamic capabilities include a number of nameable processes like product development, strategic decision making and alliancing. Dynamic capabilities are also recognizable, not vague and have some common characteristics. It is suggested dynamic capabilities can be replaced and substituted over time and their traits are
similar in successful companies. There are also differences in terms of dynamic capabilities in different types of markets. In highly fluctuating markets dynamic capabilities are clear and simple processes which are based on quick learning and new, unconfirmed information and the outcomes can be unpredictable. Learning mechanisms lead the way how dynamic capabilities are developed. (Eisenhardt & Martin 2000) Wang and Ahmed (2007) go further and state that dynamic capabilities may also be industry and company specific in the way that they are reached.

As dynamic capabilities can be similar in companies in the same market, the way they can be utilized for competitive advantage is rather in the resource configurations they bring out than just the capabilities themselves. Therefore dynamic capabilities themselves do not produce competitive advantages but are required items in them nonetheless. Dynamic capabilities can be used in developing existing or new resource configurations. (Eisenhardt & Martin 2000)

Dynamic capabilities as a view emphasize processes like learning, integrating and readjusting. These processes actually are utilized to create settings for how resources can be reachable and available in fast dynamic markets. (Eisenhardt & Martin 2000)

Teece et al. (1997) and Eisenhardt and Martin (2000) can be considered as the two most definitive articles on the definitions of dynamic capabilities theory. The two articles, despite focusing on the same theory, possess a number of key differences. (Peteraf et al. 2013) These should be noted here although as per way of definition this thesis utilizes both and does not favor or argue for either view, as this is not part of this research. One should also note that the articles can also be considered to complement each other, despite the differences that are about to be explained.

The first difference is on the question of if dynamic capabilities can explain sustainable competitive advantage in a dynamic environment or industry. Teece et al. (1997) mention the need to be able to meet fast technology changes in markets but Eisenhardt and Martin (2000) focus on the need to have strategic speed and adaptability in more simple but unstable issues by nature. This is therefore a difference in the industry requirements and areas of focus for companies. (Peteraf et al. 2013)
The sustainable competitive advantage is the second issue of difference. Teece et al. (1997) believe that dynamic capabilities can enable sustainable competitive advantage. They mentioned that the continuity of this advantage is down to how well competitors can copy it and in what time indeed. Eisenhardt and Martin (2000), having mentioned dynamic capabilities as more simple processes by nature, stated that while dynamic capabilities offer advantages, they cannot be sustained as competitors will be able to meet these issues and then resources must be reconfigured again. Eisenhardt and Martin also more generally state that it is quite rare that dynamic capabilities can explain competitive advantage, sustainable or not and thus denying Teece et al. (1997) earlier statement. One main reason for this is the belief that unique or scarce resources are very hard to come by for any firm. (Peteraf et al. 2013)

The dynamic capabilities view can occasionally seem very theoretical and difficult to connect with real business life. Cavusgil et al. (2007: 163) state that: “*dynamic capabilities can be used to develop resource configurations that lead to long-term competitive advantage.*” This means that dynamic capabilities, possibly something like superior products or business partners should be attempted to be created by company management. These types of things as parts of company resources can help develop competitive advantage. According to the article, it is not easy to adjust dynamic capabilities, which can be difficult to define from inside a company, into resource configurations. Dynamic capabilities inside company’s processes try to develop value creating strategies from these processes, and some companies can do this better than others. Processes here are for example product development or pricing. (Cavusgil et al. 2007) Changing, learning is vital to renew and update the key capabilities, in terms of a company’s survival (Barney 2001; Cavusgil et al. 2007).

The main elements which can make a company be rigid and struggling for flexibility are path dependency, as well as structural inertia and commitment. Trying to solve this issue can also create problems. The company may lose some of its original idea or strengths of organizational capability which are already in place. Inertia can be an issue in terms of rigid processes, which even when creating good quality can become inadaptable. (Schreyögg & Kliesch-Eberl 2007) Understandably, large resource
commitments can therefore create inflexibility, and that is more costly when the environment is more dynamic, too.

With current dynamic and changing markets, it seems no longer so simple to sustain a well-developed set of capabilities. Ability to change and adjust quickly has grown more important. (Schreyögg & Kliesch-Eberl 2007) Teece and Augier (2009) add that a company can earn a competitive return when in possession of resources or competences, but without dynamic capabilities the returns can be sustained only for a short period of time. Utilizing dynamic capabilities enables the chance to bring in good profits in the long term. Good managers will sense and seize opportunities in a dynamically competitive company.

Teece and Augier (2009) also explained the dynamic capabilities framework and its typical assumptions. Unlike some other theories and approaches, it is not overly based on the rationality perspective. Company managers are assumed to have limited information and to make only restrictedly rational decisions (Teece & Augier 2009, Lockett & Thompson 2004). Companies are assumed to aim for profit but not necessarily profit maximization. Companies are not assumed to be fully path dependent and companies both adapt to and mold their environments. (Teece & Augier 2009)

According to Schreyögg et al. (2007) the dynamic capabilities can be divided to three different theoretical viewpoints, which could help researches on real life companies too. The first is called radical dynamization approach, the second is the integrative approach and the third is the innovation routine approach.

The radical dynamization approach is based on the idea of developing capabilities into complete adaptability. Capabilities are constantly changed with different combinations of resources but simple by nature. Resources are quickly acquired, integrated and again reconfigured. This happens on basis of new information and market changes, for example. Organizational learning happens in all parts of the enterprise, unbound to rules much. This leaves question marks on environmental issues and whether a strategy can be based simply on quick reactive moves. (Schreyögg et al. 2007; Eisenhard & Martin 2000)
The integration approach combines organizational learning and inertia, or in other words systematic replication. In theoretical terms, according to Schreyögg et al. (2007), this can cause a contradiction of terms, but it is simple to imagine that a lot of organizations need this type of combination of ideas in real life. The article adds that there can be sets of routines which change the main routines of an organization, so as not to become too fixed.

The innovation routine approach is based on creating some new bits, which can develop new problem solving related to capabilities. “Learning mechanisms” can develop a company’s routines and processes, which is especially needed in more dynamic environments. (Zollo & Winter 2002) It can, however, be very difficult to create routines through innovations (Schreyögg et al. 2007).

According to the article by Wang and Ahmed (2007), dynamic capabilities are embedded in processes rather than just being processes. Processes can be moved and transferred in and out as well as internally, being often easily definable and modifiable. Capabilities are in essence how a company can utilize resources, often combined ones. These mix normally both precise and tacit processes. Capabilities can therefore take time to build, with for example quality evaluation, a simple process, to become total quality management which is spread and part of an organization’s culture.

When a company is seen as a collection of resources and capabilities “dynamic capabilities underline the processes of transforming firm resources and capabilities into outputs in such forms as products or services that deliver superior value to customers; such transformation is embarked on in such a swift, precise and creative manner in line with the industry’s changes”. (Wang & Ahmed 2007: 36)

Wang et al. (2007) identified three separate factors of dynamic capabilities. These were adaptive capability, absorptive capability and innovative capability. The first one emphasizes a company’s ability to adapt, by flexibility of resources and alignment of resources and capabilities, to environment changes. Absorptive capability stresses the importance of intake of external information and combining that to the internal information which is already in the firm. Then the information is
to be used internally for business use. Innovative capability connects the firm’s internal innovativeness with opportunities from market-placed advantages. It is the connection between innovation and products that are brought out to the market.

Innovative capabilities, as possibly the other ones, exist in different types as well (Ozkaya 2011) but this is out the scope of this thesis.

Figure 1. Research Model of Dynamic Capabilities (adapted from Wang & Ahmed 2007).

Figure 1 shows one description of where dynamic capabilities come from and where the consequential results come up. Market dynamism is the overall antecedent here and both firm specific and common factors affect dynamic capabilities. The more dynamic market there is, the more there is also need to develop dynamic capabilities. The component factors, or capabilities, which were explained in previous passages, are common for most firms as it is natural to do business through those types of
issues. The major differences are the internal processes and how these are introduced, molded and kept going or replaced. (Wang & Ahmed 2007) The following subchapter explains theory on the antecedents of dynamic capabilities and connecting issues from organizational routines and strategic change management.

2.2 Antecedes of Dynamic Capabilities

This subchapter begins with a short lead into the concept of dynamic capabilities, because it is founded on things within an organization and is certainly not given. Them this subchapter gives some theoretical foundations for dynamic capabilities theory and some antecedents which can lead to dynamic capabilities in companies.

Wang and Ahmed (2007) state that dynamic capabilities need to be viewed considering the antecedents, the concept itself and the consequences. Eriksson (2013a) has used a similar approach. This thesis attempts to utilize this structuring in this chapter.

It is again important to note that dynamic capabilities, as indeed most phenomena and discussions in international business, are researched in an attempt to explain the performance and competitive advantage of firms. It has been researched widely and Eriksson (2013) combined the findings of altogether nearly 400 articles to adjust and organize the contents of these.

Dynamic capabilities as a concept is based on the resource based view of a company and similarly it assumes that the success of a company comes from the company’s proactivity and management of resources. To give a short mention to the resource based view is therefore appropriate here. Resource based-view argued that resources which are all at the same time rare, valuable, imperfectly substitutable and imperfectly imitable are a location for competitive advantage. (Barney 1991) Understandably, the scarcity of resources is very much connected to the types of options a company has in business.

Teece and Augier (2009) and Helfat et al. (2007) bring up earlier theories and discussions very much as the foundations for the dynamic capabilities theory. They
mention first behavioral theory of the firm which was not as prescriptive and extended as dynamic capabilities theory and more narrowed to choices forced by the external environment.

Transaction cost theory is another one which is mentioned by Teece et al. (2009). One of the biggest differences here to dynamic capabilities is that transaction cost theory does not explain new resource foundations and organizational learning so much. Evolutionary theory is also mentioned as possibly the way how learning organization ideas have come to the dynamic capabilities theory. These theories are too large to describe in further detail in this thesis as dynamic capability theory and different viewpoints are themselves studied at length by different scholars.

Dynamic capabilities are arguably the highest form of capability an organization can have. It is preceded by resources, processes and capabilities and core capabilities. Resources are often simple things like land, buildings and money. They are the foundation of a company and the base from where capabilities are built. (Wang & Ahmed 2007) Processes are actions like quality control, wage accounting or bookkeeping. Capabilities are abilities to utilize resources to reach a target. These can be quickly reactive pricing, quick flow of information or useful stock control, depending on the type of a business. Core capability can be for example responsiveness to customers (Wang & Ahmed 2007) through the types of capabilities just mentioned, or something like location advantage to fly to Far East to give further example. Dynamic capabilities emphasize that a company is continuously aiming to preserve, develop and reconfigure resources, capabilities and core capabilities to adjust to environmental changes.

Wang et al. (2007: 40) added this statement: “Market dynamism is an antecedent to firms’ dynamic capabilities; the more dynamic a market environment, the stronger the drive for firms to exhibit dynamic capabilities in light of external changes.” This is understandable in that many firms would today operate in projects and short term, looking at spells even shorter than one year. As changes happen in the external market environment then it is easy to think changes will happen quite often internally as well.
Organizational learning is required for a company to deal with this market dynamism. This begins from the level of individual learning. It has been researched that organizational learning and market performance are correlated positively and directly. Also organizational learning and innovativeness were found correlating positively and directly which made all of organizational learning, market performance and innovativeness in a positive relationship between each other. (Tanriverdi & Zemal 2006) When market dynamism grows higher, it puts a strain on established organizational routines and the decisions between different courses of action become more ambiguous. Also, to be too strict in only making unanimous decisions can restrict the effects of the decisions in dynamic markets, especially when using a differentiation strategy (Homburg, Krohmer & Workman 1999).

According to Ambrosini et al. (2009), there is still very little evidence theoretically on how dynamic capabilities can be created and built in purpose. Possibly in a specific industry these capabilities are similar across firms and can be identified more easily per industry rather than per firm. The article does conclude that dynamic capabilities often come as results of business experience and learning inside the organization. Similarly, Helfat et al. (2007) states that, a dynamic capability which an organization may have is difficult to notice. Only when a capability is put to use and processes make things happen, can it be noticed. A capability means there is potential for action but if there is no action then it can remain in twilight what the capability precisely is.

This was also previously stated by Zollo and Winter in 2002. They identified learning mechanisms which would lead to the creation of dynamic capabilities. An organization needs to accumulate experience, articulate and codify knowledge. It is important to draft and write guides and memorandums about processes and the ways things are done. This will help to identify mechanisms and potentially build dynamic capabilities. In rapidly changing environments it is especially important to track the actions down and employ even change systems which help with adjustments to the constant environmental changes. Collective focus on learning and talking and sharing information that way is important too.
Hung, Yang, Ya-Hui Lien, Mclean and Kuo (2010) also note that many claim that dynamic capabilities are born through organizational learning or that dynamic capability is actually “resident” in organizational processes. The article combined two organizational items in process alignment and learning culture to one framework which leads and connects them with dynamic capabilities. It is another study which originates from the resource based view, but it also originates from the knowledge based view. It supports previous researches on the idea that processes need to be managed in alignment with other organizational variables like learning culture in order to build dynamic capabilities. Figure 2 shows the main idea by Hung et al. (2010).

Figure 2. Model for Organizational Performance (adapted from Hung et al. 2010).

It is important to note that individuals must learn before an organization can learn. People need to make discoveries which can then be made to spread in the organization. This is especially important and simple contribution for managers. There has to be a direction and the organizational learning, culture and processes
should be directed the same way. The other way around the dynamic capabilities which can be developed are affected by this background setting.

The article by Zollo et al. (2002: 344) finally proposes that dynamic capabilities are born from the “tacit evolution accumulation processes with explicit knowledge articulation and codification activities.” The way that the three learning mechanisms interact is considered more important than the ways these mechanisms are deployed. Organizations would learn systematic ways to change and develop routines through this combination of things.

Eriksson (2013a) has divided antecedes of dynamic capabilities into internal and external ones. As explained in more detail in the following subchapters, managerial work is very important in internal antecedents. Externally the article notes environmental issues and relationships between different organizations.

To conclude the findings on the antecedents to dynamic capabilities, the most notable and mentioned concepts have been learning, systematic processes internally and changes outside organization. There is some argument whether dynamic capabilities can be developed in purpose or not, and whether they can be noticed or not. This subchapter has highlighted both theoretical and practical antecedents of dynamic capabilities. It is useful to look a little bit further to see whether it is possible to identify micro foundations for dynamic capabilities, which could specify this phenomenon even still slightly more accurately from the bottom up.

2.3 Micro Foundations of Dynamic Capabilities

Firstly it should be stated that there can be many different contents and definitions of what is micro level in strategic management and it is not the attempt of this subchapter to define or include what is absolutely correct. This subchapter is included more in order to offer some idea within the scope of this thesis and the research questions and problem. Mainly selected here are ideas which are linked to the individual or group of people inside the organization. To be better able to identify dynamic capabilities, one must recognize some of the types of micro foundations where they can potentially come from.
According to Teece (2007), success in business today no longer depends on maximizing efficiency in production and economies of scale but finding and nurturing opportunities. Often combinations of internal and external creations, opportunities also require good knowledge transfer and intellectual property protection. One must negotiate copying and other problems in global business and still also do the traditional things like quality maintaining, inventory and cost controls really well. Following information flows is one very demanding thing due to the huge amounts available today. All statistics, conversations, field publications and customer feedback are vital and it actually depends partially on individual capabilities on how well this all can be utilized. Indeed, one stream in micro foundations goes towards business opportunity creation (Teece 2007) but here the focus is on preparation for changes and reactivity.

Eisenhardt and Martin (2000) note that the reactivity and alertness, in other words cognition are important particularly within the senior management level in terms of how companies react to changes. Without doubt some of how well cognition and also learning happen in lower levels is down to how the employees are managed. According to Nelson and Winter (2002), while a tradition of short feedback on short intervals can counter difficult issues at work, it does not help to look ahead for potential changes and develop preparation for such. This could be linked to the goal of efficiency more instead of agility, bringing it close to what is looked at here in this thesis.

Gavetti (2005) continues from Nelson and Winter (2002) that hierarchy and recognition of assets and attributes internally is strongly linked to capability development. This choice and combination and rearranging is argued to be especially valid in new beginnings. By this I mean situations like market entry or more negative ones like layoffs or plant closure. In this work (2005), Gavetti goes on to suggest that causalities which result from hierarchy, management and reliance on routines within an organization are micro foundations which adjust of the idea of dynamic capability. He mentions that this is one line of structural considerations research could help to articulate the base of dynamic capabilities.
Micro foundations of dynamic capabilities were listed by Teece (2007) more generally, consisting of following:

- Specific organizational skills, processes, procedures and structures
- Decision regulations and orders

These sorts influence sensing and cognition reconfiguring capabilities in the organization, which he acknowledges are very hard to improve and utilize. Strong dynamic capabilities often stem from entrepreneurial attitude, Teece continues (2007). Again this is a link towards agility, which larger companies do not often focus on as much as efficiency (Doz & Kosonen 2007). This is understandable in the way that agile companies would be likely to need to make more and smaller strategic moves than larger ones and even when there is entrepreneurship in larger companies they can lack the flexibility to make moves due to structures that are in place more formally.

To define his idea more accurately, Teece (2007) identified phases of analyzing, utilizing and managing changing resources where dynamic capabilities are concerned. According to the article, there should be set routines for analysis in place where the company can find foundations for capabilities. These include processes in internal research and design, supplier innovations, tapping to developments in science externally and market and customer analysis. Then the company would adjust enterprise structures and processes, for example to utilize opportunities. This includes selecting business or product model, developing functional decision making rules, and generally building commitment and awareness on drawing company boundaries. Finally managing assets is the last part of Teece’s (2007) idea on dynamic capabilities foundation. Continuous reviewing of assets and overall management, decomposition of processes and the aforementioned knowledge management are the issues which he includes.

Similarly to Teece (2007), Abell, Felin and Foss (2008) emphasized routines and capabilities, maintaining the importance of knowing the boundaries of these, when looking at business opportunities. According to Winter (2003), utilizing dynamic capabilities is more costly than a normal problem solving. It takes money to create
and maintain routines, for example in product development. Therefore dynamic capabilities are arguably largely founded on routines which in turn are a decision a company takes. Whether it decides to invest in developing routines and managing them and personnel who are involved in them, is a management decision depending on its benefits compared to more reactive “ad hoc” problem solving.

In a sentence, dynamic capabilities must largely arise from actions and leadership of company’s management. (Teece 2007, Eisenhard & Martin 2000) Managerial knowledge is very important in dynamic capabilities evolvement (Adner & Helfat 2003). This I understand is also one of the main reasons the theory has been criticized from. According to Bromiley and Arend (2009), the theory makes at times too trivial arguments. Some companies do better and make better decisions than others but according to the article there would have to be more guidance and consistency of terms in the theory. Generally there could be further research on the micro foundations and their effects along with larger antecedents in the creation of dynamic capabilities (Rodenbach & Brettel 2012)

Rodenbach and Brettel (2012) also found the person of manager (CEO) to be important for businesses in dynamic environment. Especially meaningful CEO is with dynamic marketing and research and design capabilities. According to the research, a younger CEO would make better use of these resources in turbulent environment whereas an older CEO will increase the use of these resources in less turbulent environment. It is important to note here, however, that the research was only done regarding these resources instead of being more general.

As this subchapter has shown, micro foundations for dynamic capabilities are not small issues but the contents here have shown many major issues which can have an effect of capability development and potential. Continuing from this, routines and strategic change management being important in terms of forming dynamic capabilities, it is worth looking at both concepts in a little more detail in the following. Organizational learning is also linked to these concepts and to this research too. According to new research (Eriksson 2013a) also project work will affect the development of dynamic capabilities but is still less researched despite being a common way of working in the current times.
2.3.1 The Concept of Organizational Routines

Organizational routines are part of creating and utilizing dynamic capabilities and that is why this subchapter handles this issue. Routines are part of the micro foundations of dynamic capabilities and therefore also the way routines are formed should be viewed as an important part of this type of strategic behavior and the search for competitive advantage. Routines can be simply defined as temporary compositions which are utilized to achieve organizational work (Feldman 2000). Organizational routines include both an abstract structure of the work and then the actual execution of the work (Feldman & Pentland 2003). Organizational routines also usually involve a number of people and interdependent actions instead of just a single task taken by an individual (Pentland & Feldman 2005).

Lately in an article, Hansen and Vogel (2011) discussed the micro foundations of organizational routines and their attributes by reviewing previous works. The article divided the different streams of research as organization theory, competence theory and practice theory to distinguish between different ideas from scholars.

In organizational theory (Hansen et al. 2011) organizational routines can be defined as rationalized patterns which relieve pressure on people who have to do these tasks continuously. Organizational routines help people be comfortable with the demands on them and be able to prepare for the tasks to be done in a certain way. Then people can focus better on unusual and sudden tasks and situations as they have more focus left from their normal tasks, routines. Even more crucially, routines help people to function in dynamic and changing circumstances, enabling them to function even in case of external pressures. (Gavetti 2005) Organizational routines develop stability and efficiency. Routines spare cognitive resources and in time can save money through transaction costs. Importantly, Becker (2004) also notes that reliance on routines and reluctance to change them might cause problems, especially under time pressure. This could be a problem in dynamic environment, whether the routine is employees’ or managers’. Routines, it should be noted, also have both good and bad attributes to them despite many benefits gained from them.
According to Hansen et al. (2011), articles which are classified as practice theory, see routines as a way to organizational change. Organizational routines have the capacity to generate changes (Feldman & Pentland 2003), and of course routines themselves also may change. Routines are performed by individuals who have their own personal power, decision-making and motivation. Individuals perform routines, and it depends again on management how they see themselves and react or not to change needs. It is not so much managers doing changes but by practitioners through endogenous issues (Hansen et al. 2011).

Eisenhardt and Martin (2000) stated that dynamic capabilities’ relationship with competitive advantage is essentially indirect and the effects are mainly on resource reconfiguration. That can be interpreted as dynamic capabilities are in fact a type of organizational routine which when executed alter the resource base of the organization towards the best it can be.

Change in routines has been noted by scholars and as mentioned the potential these adjustments can have. Feldman (2000) argued that organizational routines have excellent potential for change even if many perceived routines as largely unchanging items. It seems Feldman noted that routines change because people are involved and because people respond to the results executing the routines bring. This is what in Feldman’s model creates an internal dynamic to organizational routines which brings about relatively continuous change. The idea of routines becomes a wider concept by this inclusion of people who do them to the research.

Another finding (Feldman 2000) was that organizational routines are not so often finely tuned and finished processes but they usually include bits which are honed and time also brings changes to selections and choices people have while executing them. Both outcomes of negative results and new ideas bring change to organizational routines but do not necessarily change the whole target or preferred outcomes. In the research, Feldman also identified that some routines cause others to change. For example, when people are hired, which can be considered a routine, they come to execute routines in places of others and therefore the execution of routines is very likely to change, even if it is only slightly. There will be the potential for changes
through new personnel. This is not saying organizational routines cannot be repetitive actions but they are not still and unchanging (Feldman & Pentland 2003).

According to Becker (2004), who studied through the many articles written about organizational routines, not all scholars believe that routines cause change. This is because some think organizational routines do not require thinking and presence of mind. Why Feldman and others who believe routines do require effort is because they have made empirical research on the matter.

Becker (2004) concludes that it is most important with routines to describe in each case how they are viewed. The concept has still an ambiguous nature in terms of its definition but in the case of this thesis, the most important thing to notice is that organizational routines do bring change and potentially create new ideas. This also links the concept of organizational routines to organizational learning (Akgun, Byrne, Lynn & Keskin 2007). The article by Akgun et al. (2007) continues that organizational routines define how organizations go about their business, manage issues and learn. Again, management of people doing the routines plays a role in all this progress. This was emphasized also by Pentland and Feldman (2005). They mention that managers can exercise power and influence changes by their management of personnel involved in routines. For managers to influence changes requires understanding of the dynamics involved in the routine internally. Training, feedbacks and controls can impact the way personnel approach the routines. This will be looked at a little bit more in the next subchapter.

2.3.2 Strategic and Anticipatory Change Management

As mentioned, the way how managers’ approach managing routines and also change situations has an impact on the way the company tries to compete and even create competitive advantage. It is a question of being proactive or reactive, also on the management level. Learning has also been highlighted within the dynamic capabilities concept and it is down to the management to encourage thinking and reflecting or simply pushing for high amounts or efficiency.
This part’s purpose is not to highlight a particular strategic or anticipatory change management tool, but to maintain the need of constant analysis in an organization and bring up issues which this type of system should produce. It also reflects on the strategy of proactive management.

Anticipatory change management is a very big part of business success. Most companies need some strategy to avoid shocks from the market. They need to try and identify issues which could affect them. Then they need to gather information about them and finally try to analyze how likely it is that these issues will end up being a problem. Anticipatory management in reliant on processes and constant scanning and monitoring of issues. (Ashley & Morrison 1997) It can be said one part of it is monitoring and managing routines and learning from them too. It is also important to have organizational routines actually for this purpose of monitoring and scanning the environment.

There are in fact numerous ways on how to analyze and learn in order to prepare for the future changes and situations. Sashkin and Franklin (1993) wrote about anticipatory team learning, which is a concept for teams to learn new and keep achieving in the future. Guttman (1993) outlined anticipatory learning for managers which is a concept utilizing scenarios and cases in preparation for patterns which will come to challenge them externally. This is just to give a couple of examples and of course companies can also decide to just adjust to challenges that come up instead for trying to avoid them by advance planning and preparation, through whatever type of anticipatory or strategic management used.

Certainly, knowing the future is not possible. Only some trends and happenings can possibly be predicted. According to Fulmer and Teegen (1995), an organization should be able to utilize a predictive model or planning style which produces at least some of the following:

- Senior management should get a base on which to make plans and decisions for future.
- The system should enable a potentially rapid change.
• The system should enable the people in the organization to go from existing data and knowledge to develop a future plan which utilizes the employees and resources as well as possible in order to develop competitive advantage.
• Any system used should also enable quick learning and responses.
• People have to be made to believe in the system and get fully engaged in work and planning in the organization.

Goldberg and Sifonis (1994) used term anticipatory capability for this requirement for organizations and managers. They highlight the need of conversation and discussion on boardroom level to achieve right direction and deal with competition. The results of this can be moved to aid the management in its decisions.

Showing good planning and emphasizing on being proactive rather than reactive has its positive and negative sides. Following up on similar theme, Imoniana (2006) described proactive management as very hands-on type of leadership in an internal environment where organizational structure is in many organizations increasingly flat. A problem here can be that these managers in their new dynamic and agile environments can come to lack the control which they want. Again, one cannot have all sides of it. Imoniana (2006) continues it can be confusing that these managers still try to implement strong leadership, team building and giving orders.

The main problems that the article identified on proactive management model were simple. It is good if company can solve issues before they really come to cause trouble but if this cannot be always done, the organization may be unable to react quickly enough when surprises do appear. Also even if risks are assessed well it can be difficult to implement corrective actions, especially if operating on a tight budget. Management may also think they know better if they find that risk assessment has given the company too much to do. In large organizations information flow from shop level to management can have too many layers and the full understanding of risks if difficult to transfer. It requires very good consultation and consultants too. (Imoniana 2006)
Others have had similar views. Already in 1996 Gardiner identified characteristics the managers should themselves have in a proactive management strategy. A certain type of visioning and forward looking is necessary. The manager has to remain calm and keep control and charge of problems instead of the other way around. A certain mindset is also needed in that there has to be the will to take on unsolved issues rather than laissez faire if this methodology is adopted. (Gardiner 1996) The importance of the correct mindset was reinforced by Hughes (2004).

A doctoral work by Kennedy (2003) brought together desirable elements of a proactive organization. These include:

- Internally agile structure of the organization in order to satisfy customers and economic requirements. Agile structure actually requires reducing internal structure which empowers people on lower levels due to reducing layers within the organization.
- Managers have to aim for the organization’s goals rather than individual ones. This requires at least some of the managers to be able to view larger entireties.
- Employees must also work towards these goals, for example through working partially in cross functional teams when they can visualize the whole situation better in problem solving through interrelation.
- Proactive organizations must assess performance actively both during projects and operations and afterwards. This requires time and resources.
- Proactive external surveys, especially on the market and customers, are required.
- Internally, climate surveys should be used to grasp employee perspectives and motives and if they match the organizations ideas. This is important for continuity and especially intrapreneurship within the organization which is required in a reactive management model. Managers are responsible that this happens, along with organizational learning through open communication systems.
The last part of this chapter looks into the outcomes of dynamic capabilities and the types of results this kind of strategy could have.

2.4 Dynamic Capabilities Consequences

This subchapter finally handles the potential and desired outcomes of utilizing dynamic capabilities. Capability development can be a result of an organization’s dynamic capabilities over a period of time. This type of development also is different between firms and normally capabilities are formed by firms by following their strategies. In this way capabilities develop as a result of dynamic capabilities which in turn were guided by the company’s strategy. Capability development is for example investing in new machinery or marketing campaigns. (Wang et al. 2007) Similarly a company could try to support agility development through dynamic capabilities or are they looking for other, possibly more stable developments like focusing on effectiveness.

Wang et al. (2007) argue, as is shown in Figure 1, that dynamic capabilities have an impact also on the long term performance of a company. This is always dependent of the strategic path and actions taken, however. The capability development that follows from dynamic capabilities should be reasonably in line with the company’s strategy; then the dynamic capabilities will probably lead into better results and company performances. The article adds that the model (Figure 1 adapted) is considering with a company which uses a more long term strategy, not one which operates with a more short term strategy. Also, the model considers a firm which grows resources and capabilities internally instead of buying external resources. Liu and Hsu (2011) state that dynamic capabilities enable firm expansion and work as antecedents for corporate diversification. Corporate diversification, which can be related with strategic agility in the way that diversified firms have more avenues to success, has an impact on the firm’s overall performance.

Amrosini et al. (2009) outlined four different outcomes from the value creation process which includes utilizing dynamic capabilities. Dynamic capabilities have an effect on an organization’s resource base, which at best results in temporary or even sustained competitive advantages. These advantages can change very quickly after
changes in customer or competitor behavior. Dynamic capabilities can aid an organization to reshape its resource base to keep up with a dynamic environment. It is important to add that, due to the characteristics external environment and organization’s position and path in it, the outcome can also result in competitive parity or failure. Keeping utilizing dynamic capabilities can also bring in much expenditure, for example on specialist wages, research or training.

Helfat et al. (2007) have mentioned dynamic capabilities as coming from different types of strategic moves and actions. Dynamic capabilities can be based on acquisitions or come from internal company growth. Utilizing dynamic capabilities can result in growth but also keep business stable and keep out of decline. The article based this on the “3 P’s” idea from Teece, Pisano and Shuen (1997) which stated that the organizations resources made the starting position. Then there are different strategic paths available to the organization. Mainly dynamic capabilities, which utilized for growth or stability within a selected path or a path change, consist of organizational processes. So the desired outcomes of dynamic capabilities can be different and sometimes progress for the organization needs to come via reducing the resources rather than building or acquiring more. This will be noted in the research part of this thesis, as in whether it is valid with this research question. Prior to research, it is difficult to see how for example closing down a plant would increase flexibility. In Eriksson’s (2013a) article, the outcomes of dynamic capabilities can be seen to be linked to strategic agility, which is handled later in this thesis, or at least changes of different types. There can be improved adaptation and anticipation capabilities for the firm (Eriksson 2013a) and dynamic capabilities have been researched to induce changes in the firm’s environment too (Järvenpää & Leidner 1997). The dynamic capabilities consequences on performance can be direct or indirect through effects on operational capabilities (Eriksson 2013a). As mentioned, operational capabilities include the concept of strategic agility.

It has been mentioned (Dierickx & Cool 1989) that competitive advantage, which dynamic capabilities can help to create, comes from resources which are not easy to copy by competitors. These are resources which cannot often be gained from the market but come from within the company. In dynamic markets the advantages a company can have are nearly always not permanent; therefore a company should try
to identify what types of processes, actions and combinations internally, normally create these types of periodical advantages. In this thesis the next chapter is about strategic agility which has been identified as a very important concept for firms operating in dynamic markets. This work is focused on measuring how dynamic capabilities influence strategic agility which is indeed an important issue in terms of competitiveness for companies which operate in dynamic markets.

To conclude this chapter, dynamic capabilities can both reconfigure existing resources and help create new ones. The resources can come from within the company or through purchases and acquisitions of different types. As noted in figures 1 and 2, the organizational dynamic capabilities are researched to help competitiveness and the creation of competitive advantages. The processes which include dynamic capabilities can also create outcomes which are negative for the firm (Eriksson 2013), as any changes can do. The consequences of dynamic capabilities can be related to strategic agility of a company. Strategic agility is seen here as an operational capability, not as a dynamic capability so much, in order to enable research on how dynamic capabilities influence it. Firstly strategic agility needs to be widely assessed with its different dimensions, definitions and scholar opinions for this research to be justly. The next chapter does that, with not yet many references to dynamic capabilities but those will come in the later parts more.
3 STRATEGIC AGILITY

3.1 Introduction

Nowadays companies need to combine complex technology and business with speed and ability to adjust to changing demands. This chapter will look into how companies can develop their strategic agility to keep up with change. First there will be presented a definition of the strategic agility from a number of viewpoints and then there are views on how to develop and create this dimension in companies. Then finally there is a review of articles which have previously described the issue in the case company’s field of business.

The strategic agility discussion is part of a discussion on how companies should be organized to do effective business in dynamic business environments. It is important to note efficiency and agility have to be balanced. Arguably one cannot have both of these elements in full flow simultaneously. Investment in efficiency is normally likely to make a company less agile and this often happens as companies grow. (Doz & Kosonen 2008: 196) Both concepts of agility and efficiency have negative and positive aspects to them. Agile organizations are typically good at external assessment and then redeploying their resources and people to cope (McCann 2004). This is much the same as having dynamic capabilities, as has previously been shown and as McCann points out.

3.2 The Concept of Strategic Agility

This subchapter gives some theoretical definitions of strategic agility and scholar views. It also gives different dimensions, elements of the concept and a few different viewpoints to it.

To first put a short explanation of the phenomenon, an agile enterprise is quickly able to change and adapt to fluctuating conditions (Lin, Chiu & Tseng 2005).

Dove (1999) explained agility as the capability of a firm to be effective in its response to both proactive and reactive needs and opportunities when the outcomes
are unclear. He also highlighted that to learn would be as important as changing inflexible organization structure and processes. That is why he actually adopted knowledge management viewpoint in his article. Knowledge management and change proficiency were found to be dependent and thus being enabling capabilities for an agile organization. The learning has, as mentioned earlier, been highlighted by Tanriverdi and Zemal (2006) to be related with innovativeness and market dynamism.

Dove was mentioned to have been among the first to discuss enterprise agility in 1991. The concept was originally based on flexibility in economics. (Ganguly, Nilchiani & Farr 2008) This shows how early this particular discussion has begun and it is still regularly reviewed and researched by scholars. Dove continued in 1996 that agility can be divided into the four issues of cost, time, quality and scope. These formed the balance of the whole concept.

Agility can give competitive advantage and is therefore worth a consideration for especially companies in fluctuating markers and areas of business. According to Barney, Wright and Ketchen (2001) this goes to the extent that when some companies in highly volatile markets are more flexible than others, more proactive and reactive in their competitive environment, they will be gaining competitive advantage.

Agility is a well-covering answer to a dynamic business environment which is littered with fluctuations and unpredictability. (Goldman, Nagel & Preiss 1995) According to the research focusing on the manufacturing agility, there cannot exist an all covering way of setting up a business and that there will be good and bad times for all types of operations. It adds that normal financial metrics for analyzing results will not provide increased agility. Core competences must be able to create customer opportunities and to react to opportunities that present themselves from the market. An agile organization can offer skills and expertise through long time periods. Core competencies most importantly come from workforce and technical forms. An organization should be organized around the core competencies in a way that rapidness and cost effectiveness are maximized in customer contacts. (Goldman et al. 1995)
The work by Goldman et al. (1995) gives the following four strategic dimensions for agile competition.

1. Enrich the customer. This should be done by creating customer relationships in a way that they last changes and are long term.
2. Work cooperatively to increase competitiveness.
3. Setting up organization to handle changes and unpredictability.
4. Utilize the effects of people and inflowing information.

Goldman (et al. 1995) can be viewed as using network perspective in the way the mention learning and communicating culture not only between departments and subsidiaries and the like internally within an organization, but also between its other stakeholders and this way meeting their demands well. The employees should receive information and be made to feel partially responsible for the firm’s success, especially through responsibilities in customer service. This is a continuous process of flexing existing structures and managing relationships to publish customer opportunities.

Agility can be put simply as the capability of a firm to take market opportunities quickly and by surprise. It is a question of how well a firm can sense a forthcoming change and make a fast adjustment of processes, actions and resources if needed. (Sambamurthy, Bharadwaj & Grover 2003)

Agility can be said to be a competitive tool for an enterprise. Companies are required to have flexibility for most departments and actions they have although agility has often been mentioned in terms of production capabilities (Tseng & Lin 2011).

According to an article (Yusuf, Sarhadi & Gunasekaran1999) there are four key elements to define agility: responsiveness, competency, flexibility or adaptability, and speed. Yusuf et al. (1999) continue that these elements could be applied successfully by integrating all knowledge and resources for creation of in demand goods and services in changing environment.
As mentioned earlier, agility can be researched from a general company viewpoint, or a smaller perspective. Roberts and Grover (2012) researched firm’s customer agility and state that it is vital to respond quickly to opportunities for innovation and competitive action which raise from the customer base.

Yang and Liu (2012) discussed agility from a network viewpoint. They found a connection on good network structure and agility creation. The article’s research supported the idea that agility capability and its network structure do offer better competitiveness and that network structure may also affect agility’s impact on a company’s overall results. With an excellent network structure, a company could develop its agility capability in finding resources quicker both internally and when missing something internally, also externally. This resource advantage can move the impact of agility to the mentioned overall results. This is important because not many firms have all resources needed available internally. In the following subchapter, theoretical researchers have identified some of these strategic agility enabling factors.

3.3 Strategic Agility Enablers in Organizations

For achieving agility, an enterprise should be able to measure and identify factors which are the key for becoming flexible in that particular field of business. This subchapter discusses this process and options related to it.

Agility has already been defined here. The issue now is what actions can provide it and how these can be measured as whether they provide agility or not. Tseng and Lin (2011) mention that a company should create an efficient and also integrated procedure for this job. This procedure should coordinate the actions included in the business in a way that there is evaluation of them and development can happen towards competitive advantages.

A good evaluation of enterprise agility needs to consider the main participants in the external environment of the enterprise: the customers, the competitors and the suppliers. (Yang & Liu 2012)
According to Vokurka and Fliedner (1997), a company generally could achieve great agility and offer added value to customers by developing four different competences:

1. Cost Efficiency
2. Quality Improvement
3. Dependability
4. Flexibility

Mason (2010) found that there can be a relationship between operational agility and internal overall performance in dynamic and uncertain environmental conditions. Also, he found that there can be a relationship between operational agility and market related overall performance in same conditions. The research could not clarify relationships between customer agility and either market related or internal overall performances, under the previous conditions. The research was on consulting industry, which is another branch in agility research.

Long (2000) discussed strategic agility, in consulting industry earlier and provided a checklist for firms who are looking to clarify whether they have got it. He emphasizes the importance of having a target towards to which the company is aiming. The values which customers appreciate most are important knowledge. It is also a question of choosing which opportunities to pursue when they open in markets as one cannot pursue everything. The pursuits of opportunities should be selected on basis of one’s own core competencies in order to make most of combining them. Creating value for customers is a two way project in the way that their opinions could but one cannot act on basis of them alone. The article adds that knowledge of competitors’ actions and how they create value is important to recognize. Long too, as Goldman et al. (1995) did, mentions the importance of communication and involvement of workers and customers in value creation.

Long (2000) states that strategic agility is an issue of where one must balance stability creating factors with factors that create flexibility. This is linked to the aforementioned pursuit of opportunities. This action must come hand in hand with overall strategy and core competences in order not to waste resources and energy.
To become agile organizations should be prepared to leave out principles of mass production and cost cutting. Agile strategy requires customization and focus on bringing added value to customers. (Hooper, Steeple & Winters 2001; Denning 2013)

Hooper et al. (2001) bring another research on agility from manufacturing perspective. They state understandably that companies that want to use their agility need great manufacturing abilities and also the management needs to be mentally different to others. It is clear that manufacturing capabilities need to provide flexibility instead of just a big bulk in a fast time. The research also has a customer based view in its case company, which found customer centrisim by taking up activity based costing. This shows one location where agility can be developed; through accounting practices. It can be argued that companies need to compare different potential management solutions to issues in order to achieve agility. This is particularly true in dynamic industries.

Zhang and Sharifi (2000) also based their article on manufacturing industry, with another type of idea for agility development and tracking for a company. Firstly, a company should try to identify the main changes and issues from business environment which press for agility, so called agility drivers. Then secondly agility capabilities should be correctly identified as well. These are the capabilities, possibly dynamic, which the company will need in order to correctly respond to the business environment and take advantage of its changes and pressures. Finally a third level consists of agility providers which are the ways of how the capabilities can be gained. Often the providers come from four main areas of business, which are the organization, people, technology and innovation.

This means that different organizations need to gather different capabilities to be agile and search for different ways to develop and create them (Zhang et al. 2000). This is slightly different from the dynamic capabilities discussion by Wang and Ahmed in 2007, which mentioned capabilities common to all organizations in a field of business and each company’s individual processes, separately. Zhang et al (2000) did not conceptualize the idea so far in the strategic agility discussion. On the other hand, they mention the notion by James-Moore in 1996, which mentioned also the
need to conceptualize how much agility is needed in that particular organization. The need to develop agility may not exist at all. It can be already in place in the required amount for the future, it can require development in the mid-term or it can require urgent action and development. Having done this, an organization can try to identify the aforementioned agility capabilities, which mainly include analyzing the changes that the company faces. Then finally the company needs to identify the things which could provide these capabilities, in order to totally become solvent over this matter.

Englehart and Simmons (2002) emphasized organization structure and policies as important concepts for enabling flexibility and agility in organizations. The organization structure and approach should obviously support its strategy and competitive requirements. A hierarchical organization is best adapted when there is a strong need for execution and actions through control. Then when agility is required for a field where unexpected changes and more effective communication is required, a decentralized organization or a flat organization structure are set ups which can work better. Decentralization can bring flexibility for example in customer service where employees can make more quick decisions for customers. A flat organization structure can bring similar benefits and when people can be flexible in their work they can also better adapt to sudden changes. Network or matrix types of organizational structures also help. The lesser hierarchical controls can bring out more creativity from work teams and personnel. People also can get to know more fellow employees in their more ambiguous roles and thereby information flow and adaptation happen quicker.

The article (Englehart & Simmons 2002) identifies other aspects too. New business directions for an organization often require different things to older “cash cow” products for example. This is why the article offers an option of separation of the new activities from the old ones. The authors cite Hamel (2000) that smaller and new units enable proper work towards the new areas for business and managers stay closer to the customers. Similarly to Kotter (2012), they cite also Markides (1998) who noted that success easily brings stagnation and too much reliance on the trusted formula which worked before and sometimes it would be useful to internally create “problems” in order for this to change.
McCann and Selsky (2003) identified aspects of organizational agility which are usually particularly strong in agile companies operations wise:

- To make sense of environment is the ability to interpret large inflow of diverse information and see where this leaves the organization and formulate theses and models for action.
- Information needs to be transferred for use. This is related to the previous one, considering particularly the ability to get and share information and use it particularly in the most critical areas for the organization.
- An agile company should also create a mandate and culture for sharp action all over the organization.
- There is therefore also a need about getting resources and human resources into the organization and adjusting and readjusting them quickly.

McCann (2004) also goes to separate agility and resiliency albeit acknowledging these include similar traits and areas like learning which enable these attributes to an organization. This, as McCann notes, takes the discussion towards some of the ideas on dynamic capabilities (Eisenhardt & Martin 2000).

Resiliency is mentioned to be the good ability of response and reaction to shocks and disruptive changes, some of which may not be only industry related. It is another question of balancing and finding strengths as some companies need this more than organizational agility and vice versa. (McCann 2003) McCann is also very strong on describing the benefits of an open organization, though he mentions this then leads to an added need of resilience and risk management. He also stated that learning from failures and recoveries is needed more. It is a type of mirrored thinking in that bad situations are important if good situations are aimed for and brings another dimension in that way for looking at creating competitive advantage. Agility and resiliency can be said to be a part of a larger discussion of adaptive capacity as well (McCann, Selsky & Lee 2009)
The article by Hooper et al. 2001 outlines a structure figure for an agile enterprise, which is adopted below.

**Figure 3. Ingredients of an Agile Manufacturing Structure. (Adapted from Hooper et al. 2001)**

The figure 3 shows (Hooper et al. 2001) an opinion on how the general structure of an agile manufacturer can be viewed. It gives a quick idea on how a company can think some organization to its strategy and which components affect it, and use the figure as part of the planning. Despite its base in manufacturing, the ideas mainly connect with most businesses. Some may have some of the core components differently, especially in service industries but the figure is worth something in its...
simplicity. This is included to help with understanding on general areas of agility in companies.

Similarly to the idea in Hooper et al. 2001, Vasquez-Bustello, Avella and Fernandez (2007) found that the combined use of agile manufacturing practices leads to manufacturing competitive strength. This will result in higher financial and market performances as well as better operational quality.

Vasquez-Bustello et al. (2007) states that firms which operate in dynamic, turbulent and even hostile environments need to normally present high agility to thrive. This is because these firms need to adjust to the following conditions: high dynamism which means relatively unstable environment changes, highly competitive markets in which there is one or more critical and scarce resources, highly complex market of firms, suppliers, distributor and customers and also highly diverse market including different product lines, businesses and people. Not only this, but managers should also realize this is so, and the firms need to develop higher manufacturing agility to be continuously successful. It is similar view compared to the remark mentioned earlier by Wang et al. (2007), but it comes from the agility discussion instead of dynamic capabilities discussion. High diversity and dynamism of markets seem to drive both dynamic capabilities use and agility development. Again, it should be remembered not all companies strive for agility but effectiveness and it would be a very strong commitment to put all in on being flexible and offer multiple options to clients.

Despite its base being in manufacturing, parts of the article by Vasquez-Bustello et al. (2007) can be generally linked on agility. The article combined previous works to set up figure on manufacturing agility which presented ideas on the main characteristics which bring agility on different organizational areas. Out of the figure, one can pick up agile human resources, agile technologies, value-chain integration and knowledge management in this more general approach. This is very similar as the ideas of Hooper (2001). Agile human resources need to include teaching, teamwork, incentives and organic remuneration systems. For value-chain integration there should be coordination between departments, and cooperation with suppliers as well as customers. Agile technologies need to include advanced design and
manufacturing technologies. Customer and supplier information should be integrated and planning systems to be in place. Knowledge management continues that databases should be accessible and continuously modified by working teams, experimentation supported by organization and there should be formal systems in place to develop best practices. (Vasquez-Bustello et al. 2007)

Serkis (2007) describe the requirement for an agile enterprise in terms of virtual enterprises, theoretically from the relationship and network viewpoint. The article states that to increase competitiveness through agility, an enterprise should handle its relationships with partners and customers firmly. The relationships would need to produce ideas and opportunistic discussion between the parties to respond to changing market conditions. An enterprise may not become agile internally if its external relationships and processes are rigid. Good partnerships are required and should be open and look for quality and productivity in all directions, particularly towards the end customer. The article goes on to describe at length the decision of supplier selection and covers a number of cultural, business and technical requirement. However, partner selection and networking are in detail out of the scope of this thesis.

Structure of an organization limits its agility in most large enterprises and corporations (Doz & Kosonen 2008: 219, Englehart & Simmons 2002). A new strategy requires often major rearranging and causes a lot of upheaval for the company. Even then the change can remain ineffective because the informal parts of the organization have not been included or thought of when implementing the change. Nowadays many companies aim to be flexible and have many focus areas and dimensions. This structure gives more strategic options and dimensions as a key agility enabler. (Doz & Kosonen 2008: 219)

Doz and Kosonen (2008: 165) wrote also that companies’ need for strategic agility is the biggest when facing complex and quickly appearing changes which are not related to each other. Then the company is likely to need different “levers” of leadership to enable strategic agility. Emotional lever, organizational and political levers as well as cognitive lever all effect the organization in different ways and can be utilized depending on which issues are weighing most. Organizational lever was
just described in the previous paragraph, while political lever is a very visible form of leadership for breaking up patterns which have become too rigid and set in the organization. This lever consists of changing personnel in the top of the company like executives or directors to create new relationships and ways of doing business. Of course just change at the top will not necessarily create a proper change throughout the organization, and certainly not very fast, but it does change some things in any case.

The starting point according to the authors, however, can be the cognitive lever. This is especially the case when a company is doing reasonably but on a narrow core business path with a lack of dimensions in the business. Widening the business acumen demands a lot of different actions and resource adjustments as well as developing ways to analyze potential threats from the external environment. (Doz et al. 2008: 181)

Emotional lever is a difficult issue for many managers but it includes actions and changes which transforms employees’ tension and emotions to constructive energy for the good of the organization. Creating emotional commitment and collectivism is more difficult for someone coming in from the outside rather than a leader already familiar in the organization, mostly because of reputation and the need to prove oneself before attempting to utilize others’ commitment in motivational actions. (Doz et al. 2008: 175)

Organizational learning, or strategic learning, is also one strategic agility enabling factor. According to Idris, Mohamad, Al-Rubaie and Taher (2013) strategic knowledge creation, distribution, interpretation and implementation all have an effect on strategic agility of an organization. Learning was already previously mentioned in the dynamic capabilities chapter. This is noted in the later empirical research as well as one of the notable elements in this type of situation. In fact, as Berghman (2006) found, strategic learning can increase the development of dynamic capabilities and increases initiatives for strategic inventions of which strategic agility is arguably part of or at least linked to. Englehart and Simmons (2002) studied organizational flexibility and, apart from organizational structures, identified dynamic capabilities as a powerful approach towards strategic agility. They too mentioned learning as one
dynamic capability. Then they also mentioned entrepreneurship, clock speed and integrated multiple competence building. All of this is useful in argument and discussion towards answering the research question in this work. An additional simple measure for flexibility, by the article, was to develop a set of options available for future use in situations where time does not allow much creativity.

It is important to note that large enterprises cannot manage every decision from the top but have to let employees and teams take decisions. It can be viewed from the other side that key risks and controlling against them are in place. Companies need to manage some areas more carefully and in a more supervised way than others. (Applegate 2001)

As it can be understood from this chapter, and the previous one, strategic management always demands trying to balance things. If stability or effectiveness is the key, then dynamic capabilities and agile management is potentially not so much discussed. But in dynamic industries companies have to have areas where they can quickly react and reconfigure and utilize existing resources in different ways. This has to be a continuous process as well (Doz et al. 2008: 219). The following chapter describes the results achieved by the qualitative research and interviews on how the case companies look to handle these issues.
4 RESEARCH METHODOLOGY

This thesis has a basic structure of introduction, theory and empirical research. The previous parts included the main theories, all of which is made through a literature and other secondary data reviews. This chapter opens the methodology, in theory and thought, behind the way the work was completed in the empirical part of the thesis.

4.1 The Main Theories as Part of the Methodology

The combination of theoretical chapters 2 and 3 is something which is not very often done in the past and therefore the way these theoretical concepts link is not straightforward. As mentioned in the research question, dynamic capabilities could be researched on their impact of an operational capability (Dangol 2012, Eriksson 2013a), such as strategic agility. Teece (1997) mentioned that dynamic capabilities can help companies to develop strategies which lean on being flexible. Wang et al. (2007) mentioned the possibility of capabilities developing through the influence of dynamic capabilities, which is taking the question a bit further than in this thesis where the question is about the types of influence dynamic capabilities can have on the operational capability of strategic agility.

Both theories are needed in this type of research method, as required by the research question and setting. Looking at the situation the other way, strategic agility theory, its requirements and enablers in organizations are needed in dynamic capabilities. Dynamic capabilities are capabilities which are developed and reconfigured from time to time, which simply requires certain flexibility from the company, its management, employees and most of the structural contents of a dynamic capability.

The similarity of the theories and even compatibility is identifiable in other articles too. McCann and Selsky (2003) mentioned aspects of organizational agility, where one requirement is getting different types of resources into the company and adjusting and readjusting them. Same type of work is required in dynamic capability strategy, Fulmer and Teegen (1995) having mentioned the needed capacity for rapid and agile changes in work life. This is why both theories have been attempted to be
extensively covered in this work and it is not unreasonable to utilize them simultaneously in this case analysis.

The theories are needed in relation to the empirical material too. The theories and empirical materials should provide differences and similarities which are relevant to the research questions. The theories are to provide a framework and width to the analysis and conclusions through their main elements identified in this work. Dynamic capabilities theory is needed to identify the abilities and attributes of the case companies as well as possible within the definitions and which of those attributes and their combinations actually classify as dynamic capabilities. The strategic agility definitions are also needed to complement dynamic capabilities and to recognize the different types of agility case companies can have and how they can benefit from their flexibilities. The way this will open up will be shown in the later chapters further.

4.2 The Methods on the Empirical Work

This empirical research is completed through interviews which attempt to connect the theory and phenomenon with the real life situation of the company. The interviews attempted to understand the company ideas and structuring for what tends to happen there, in a consultant type of work. To link this type of theory to business in practice, one is required to have a close look to real life strategy and actions and decisions within. This is argued for by Bowman and Ambrosini 2009 regarding the research on dynamic capabilities. New companies also would not have dynamic capabilities at the beginning (Helfat & Peteraf 2003) so it makes sense to research ones with a little bit more maturity.

This thesis is a qualitative work in the field of international business and strategic management. This is reflected in the methodology of the thesis. The theoretical material was collected mainly from scholar articles in the field, some books and article collections also came up. The empirical material was collected from interviews of professional people who work in the field of energy conservation industry. The energy industry is very dynamic as mentioned and this suits the case study method. There is change and new resources, routines or systems and although
the field is technological the focus in this thesis is on the companies and their organizational issues a lot, much as defined by Iacono, Brown and Holtman (2011). This all contributed to the selection of case study method.

The way which the interviews are completed is through half structured format (Koskinen, Alasuutari & Peltonen 2005: 104). This is because the research problem is not so simple that a fully structured form filling can work and the researcher is also not a professional in this field or company himself to allow this type of fully shaped questioning. A more open semi structured shape would give more possibility in answering and discussion too because the actual capabilities and issues are not all clear before the interviews. This type of interviewing is therefore thought to most likely give this research the needed information and be efficient enough. Also, busy professional people will not need too much of their resources to comply.

On the other hand a deep interview (Koskinen et al. 2005: 104) would have opened up too many directions in the interview and potentially would not have addressed issues sharply enough to deal with the research problem. Also, merely analyzing official records of the company would not allow understanding of the internal operation and strategic choices and planning involved to properly address the issue. Therefore relying primarily on secondary data would not have worked. This is not to say quantitative data would not have worked in this setting (Yin 2014: 19) but as an international business student it was more within my capability to analyze qualitative data so those are the reasons for semi structured interviews.

This type of research question also is not targeting something which would strongly discourage from using interviews. This is not focusing on technical details or even singular process details but on slightly more general picture and issue. (Koskinen et al. 2005: 107) Of course the interviews consider historical things (Koskinen et al. 2005: 107) which have already taken place but not ones which are way behind already. Given more time and resources some observing type of research could also be an option but this would in my opinion need one to actively work or at least spend lengthy spells in a company. Granted the information in these issues researched is with more than one person in the company but this issue was accepted as restriction. Instead it was decided that two companies would be included in the research. The
often required field work (Yin 2014: 24) was attempted to be solved by going up to the company offices to do interviews. This would give possibility for the required depth of analysis. Varying sizes of companies with slight differences in main pipelines and market niches would offer possibilities for comparison if needed and especially add dimensions to the analysis.

The main strengths of using interviews in data collection are that the focus can be directly on the topic and interviewees can give their insights, explanations and topic background with reasonable ease. On the other hand they may sometimes be too close to the phenomenon to analyze it clearly, may not remember details and begin to lead the conversation too much. (Yin 2014: 106)

The research could have been completed on any company or companies whom operate in dynamic industries, perhaps excluding very small firms of just a few employees. If strategic agility is needed to be looked at the theoretical parts provide useful basis for further research. Also a similar research on agility and dynamic capabilities could possibly be done through already published material of a company such as annual reports and other press statements but this was seen as not quite the required base for a master thesis type of work. On a final note regarding this side of the research definition, the research will look into positive business developments through the theoretical material instead of the negatives and rigidities which also came up in the theory.

The companies in question are all Finnish. The energy conservation industry is too large to analyze as a whole case but it was possible to get information and research done on the Finnish field. This is not to say international business was not part of it, the whole of companies operations was included in the interviews and the interviewees were asked to generally utilize all company departments and functions in their answers.

The executives were asked around a dozen questions on matters like main changes in the company resources and capabilities as well as in the field. Then they were asked to discuss documenting of work, analysis of work and its routines and the importance of learning. The agility requirements in the industry were also discussed as were the
success factors they themselves considered to have. The changes in the business field and reacting and predicting those kept coming up in the interview discussions and the executives were given additional questions when needed.

A case study as such is a very common method in business study qualitative research. It concerns a research with one or more cases selected with a certain purpose. Often there can be only one case, in some instances there can be more. (Koskinen et al. 2005: 155) In this thesis there are two different companies included in a case study type research. In my experience it is also common to link case study with semi structured interviews in business studies and this option was utilized here too. For its time frame, the research was loosely connected to the previous five years in the companies’ histories as well as near future thereby filling the time frame requirement of “contemporary phenomenon” by Yin (2014: 24) regarding the case study method. As mentioned, the companies are looked at quite generally on most parts of their businesses, attempting to utilize a holistic method (Yin 2014: 24).

For more argument for case study as a method here can mentioned that the research questions need answering to question “how” (Yin 2014: 11) and reasons for the phenomenon as well. The situation met another condition for choosing case study by Yin (2014: 14), in that the research was on recent events but on which the researcher had no control over.

The case boundaries (Yin 2014: 34) are not simple to define here but the work consist of two companies in same business field in real life. External relationships and other stakeholders are not heavily included in the analysis. This is because the analysis concerns mostly internal actions and strategies and therefore in my opinion lessens the need to talk to other participants of companies’ networks in this work. In a different analysis, one could have interviewed only some of the companies’ customers for example, but the view for empirical material here is from the inside, not outside of the firms.

There are two internationally operating case companies instead of one because it offers strength to the analysis (Yin 2014: 64). The results will not be spread to the companies in all general form but only for the parts which they are connected to (Yin
2014: 63), and although analysis and conclusions include arguments which are made of basis of both interviews, the idea is to be more holistic than embedded in this work. Not totally as there are those conclusions involving both companies but more towards holistic approach.

For the analysis, the method generally relies on theoretical propositions (Yin 2014: 136). The material from the interviews was first divided under four main categories selected from what turned out to be main themes in the theoretical part in my opinion. Then the analysis is written mostly in an explanation building (Yin 2014: 147) type of technique. The executives’ opinions are met by previous theoretical arguments and from there, there is an attempt to explain and conclude the phenomenon, both individually in both companies, and finally as theoretical figure and explanation on the phenomenon.

The conclusions chapter 6 will include evaluation on research validity and reliability. Yin (2014: 45-49) identified four criteria for looking at the quality of a case study, a structure which this thesis utilizes. It included firstly construct validity which consist of using the right operational options and enough evidence for the study; partly a question which has been attempted to be answered in this chapter already. Internal validity is a question of whether logic is applicable in causalities in analysis, which can be difficult to prove as hidden factors can be in place in company situations. External validity considers the generalization possibilities and attempts of the study and whether there can be generalization. Study reliability is a question of if the study can be repeated and done again.

The following two parts will offer simple introductions of the executives and their companies. Executive A works for Company 1 and executive B works for Company 2. Then it will be chapter 5 and the analysis itself.

4.3 The Executives

The executives interviewed in the research were all Finnish nationals, still relatively young persons with already solid working careers and experience behind them. They
were selected based on the availability their companies graciously granted for the research.

Executive A is an operative director of company 1, particularly responsible for production as well as human resources. Executive A has worked for the company for two years and has previously worked for a number of years for another company in the same business field.

Executive B is a director of export of company 2, particularly responsible for all export operations and sales of the company and has also worked for the company for two. Executive B has previously worked for security and industry automation as well as public transportation systems in a ten year working career with studies on building technology and automation done previously.

4.4 The Companies

Company 1 was founded in 2002 with a new ownership and control in 2012, when a new start was made. The company employs around forty people in Finland and also abroad. The company mainly produces technology for houses and flats energy conservation and heat management when utilizing district heating. Its customers are mainly housing cooperatives and larger real estate agencies and industrial companies domestically and also internationally in for example Sweden and other neighboring countries.

Company 2 was originally established in the late 1980s in heating system automation, later expanding domestically and internationally to heat and energy surveillance systems in various types of real estate. The company employs roughly 240 people in Finland and abroad. Its customers vary from consumers to large real estate managers and companies in Finland, Russia and other neighboring countries.
5 DYNAMIC CAPABILITIES AND STRATEGIC AGILITY IN ENERGY CONSERVATION CONTEXT

5.1 Introduction to the Set-up

The purpose of this chapter is to analyze the interviews and define what the main organizational capabilities are which a company can utilize when they need to be agile and potentially how these can be measured. It attempts to answer the question of how dynamic capabilities can influence agility in a company. The thesis has taken into account both internal and external factors which together affect the company, as agility is strategically a holistic term and context specific (Sherehiy et al. 2007). Also, both proactive and reactive modes in change proficiency are important for the company. A company needs to respond to threatening situations and on the other hand be innovative by making proactive changes (Dove 1999). The research includes both organizational and business environments as well, most issues concerning both areas.

Dove (1999) noted that when there is a need for quick development and learning a company needs to bring in and utilize information faster. A culture of learning and supportive structure should bring in more ideas and overall ability for the company to create with intelligence. If there is a need to improve and learn faster the organization should try to gain knowledge quicker and also divide it internally quicker. Everyone should be looking to learn and the culture should support this as well as sharing all information. Then there would be a better chance to develop the place to such that a larger understanding of the business can happen and spread. (Dove 1999) The ideas from Dove were utilized in the research process as some basic requirements of what are requirements in today’s business.

The first part of this chapter is set out to give the main ideas and outcomes in the interviews divided under four theory-based main categories. This is to give understanding on where research results are coming from, although discussion is also included as well as research question answers to some extent. The subchapter headings were picked from the overall themes in the theoretical parts with research questions as a foundation on the types of issues that needed handling. The reason
whereby companies are handled separately in these subchapters also comes from theory as dynamic capabilities (Wang et al. 2007) and strategic agility also, in my opinion, must be handled company specifically to an extent. If companies were similar then this could move directly to the overall analysis but the differences in them meant that individual discussions were first needed. The sub headings are mainly to give each part a direction, the overlapping of material and comments is done.

This is then followed by the overall discussion part which is to answer the research questions with more general approach under the Finnish industry in this field considering all interviewed companies although pure generalization is not possible in the context.

5.2 Changing Resources - Dynamic Capabilities?

Company 1

The company one has grown with a lot of dynamism in the past two years. They have expanded their operations by employing at least 30 persons in this time and become a business worth some millions in the process. These are not, however the only resource changes. They now have also international representation and this has led to them becoming more dynamic in expansion. (Executive A)

The most important capability for the company has been its product and how the marketing, sales, and installation for customers have evolved. It fits in with requirements for dynamic capability because it is a combination of resource use and set up. “The product technology is still the same but we have sharpened up its service concept: its ingredients, the way it is presented to customer, installed, sold and priced have developed during the whole two years.” (Executive A) This has developed it into a capability, similarly as in the theory by Wang and Ahmed (2007). The capability is a combination of more personnel in installation work, increased sales and sales personnel and experience gained. Despite more companies in the market and more regulations on energy, the product is very profitable through this dynamic concept development, a dynamic capability.
It has seemed to have been aided by good information flow between installation personnel and sales as well as between company and customers. The company utilizes new technology in the information flow between installation workers and sales personnel (Executive A). The customer gets the same core value in energy conservation and heat management but it is produced in a different concept compared to before due to these adjustments and combinations.

Yet the origination of this argued dynamic capability in product has not yet been looked at here. Managerial involvement in key accounts and sales pipeline monitoring has been seen vital by the company. This has been combined with very frequent sales personnel meetings with management and sharing the new market information from customers. (Executive A) It is individuals learning here before organization learns (Hung et al. 2010) and it leads to systematic change and routines development (Zollo et al. 2002) which is arguably an antecedent for company 1 dynamic capability.

Company 2

The company 2 is a very product oriented company traditionally. During the recent years it has encountered a lot of competition in the market (Executive B), which in turn makes it more difficult to “deliver superior value to customers” (Wang & Ahmed 2007: 36). However, the company overall has now more resources to deal with this as through acquisition and ownership change it now has access to larger production facilities. “Combined, the companies now have twice the product development personnel than before.” (Executive B) This has improved its capacity and also enabled some lower priced bulk production even in smaller orders in the extended facilities abroad. It also has better access to some market abroad through some structures which it can also be utilized now. (Executive B)

The company has invested strongly in its product development domestically during the last few years. The company has also long aimed to be customer friendly through easy use of products. (Executive B) This is not easy in a field which is relatively high technology so it has required steady increase in product development work force and strong communication between customers and sales people, through to product
development people, again. In a by now relatively mature industry niche, issues stem from whether to follow new trends which new customers may like or to develop already existing products which older customers may appreciate more (Executive B). This is a balancing act, arguably needing an integration approach (Schreyögg et al. 2007) which combines learning and new developments with already existing offerings of the company. There is also a potential opportunity to create a common product platform: “The Company 2 could optimize the use of same parts of products to different purposes.” (Executive B) This combined with the ownership changes affecting the overall direction and values of the organization, makes potential dynamic capabilities less obvious in this case.

Looking at the overall picture, if there is a dynamic capability here it is in product development through combination of research and development, communication to that department from sales where the latest market information is (Executive B) and reliable, user friendly products. Why this combination may or may not classify strictly as a dynamic capability, instead of just capability which it certainly is due to simply the size of the business and the company, is the question of how much dynamism and constant development is wanted collectively in the company currently and how much there are routines which support learning, development and communication. Looking at the micro foundations of dynamic capabilities, where these normally arise from, the actions and leadership of management (Teece 2007, Eisenhard & Martin 2000) are not yet very visible here due to a recent change in indeed company management.

5.3 Dynamic Business Environment

Company 1

During the last couple of years, due to its new product concept development, company 1 has not had large surprises from the market which would have needed reacting to. “Mostly the changes have been enablers, the reasons for changes root from growth and the willingness to move onwards and challenge the business environment”. (Executive A) This is not a straightforward issue however. To reach this market knowledge and understanding has required dozens of client meetings,
meetings with different related authorities and forum participations. The latest market information comes from the market itself (Executive A). These are the types of firm specific integration and renewal processes (Wang et al. 2007) which directly contribute to the creation of capabilities and even dynamic capability mentioned in previous subchapter.

The market niche of company 1 is a good place because at the moment most of the external issues that come up are in fact enablers for their business. If authorities, domestic or international, create restrictions on energy conservation, there is increase in demand of company 1 types of products. The development of energy price is contributing to increase demand (Executive A) as well as arguably shifting consumer attitudes towards the need to conserve energy more.

The understanding of the market and knowledge of its participants and factors comes originally from the market but has been developed internally. The understanding of the need to do that has been vital to develop advantages, which in a dynamic market are usually not permanent (Dierickx & Cool 1989). Dierickx et al. (1989) argued that competitive advantage come normally from resources within the company but the information that has led to that development has come externally in this case. It is a type of outcome from the dynamic capability of the product concept. This has improved the adaptation and anticipation capabilities of the firm, the type of thing that Eriksson (2013a) also noted in her research. However, the type of advantage the company 1 has arguably created, can also switch very quickly in result of changes in competition and customer behavior (Ambrosini et al. 2009)

Company 2

The company 2 is well equipped to deal with this need of investing in sales. The fact that the company was sold has increased the network they now operate. They already worked in cooperation with numerous domestic wholesalers as well as having their own expert sales persons with more complicated solutions. (Executive B) There has already been mention of the increased production and research and design capabilities and the company can now promote its products through more established structures in Sweden, Estonia and Russia and will possibly also look to increase
involvement in these countries by sending experts to work there for extended periods of time ranging from one to two years. Through these processes of integration and recreation (Wang et al. 2007 adapted Figure 1) of sales operations in company 2, there is an opportunity to help clarify capability development for the firm. As mentioned in previous subchapter on company 2, this clarification of direction is in process.

This would require also some utilization of learning mechanisms (Zollo & Winter 2002). This means, for example, that company 2 will need to keep developing drafts and memorandums and generally all forms of communication in order to bring fully utilize the new extended resource base. “We have very recently seriously taken on a tracking system in sales organization where we make all notes. We report and document through different types of tools generally as well.” (Executive B)

Collective focus in this is required, and has already been demonstrated in the way the companies which now work with company 2 under common ownership have all sat in same table with clients who now have an extended range of potential services available to them. The company 2 has even an option now to use some type of change system (Zollo et al. 2002) to help with the constant changes in its competitive environment.

5.4 Routines, Documenting and Learning

Company 1

Company 1 relies on routines to support the more agile product concept. They employ an unconventional weekly tracking system on work, both in sales management and in installation work including weekly meetings. Basically there are two levels of main concern in a rolling forward planning model. The management is quickly able to support any area where it is needed, and will also look to plan this support a bit in advance. (Executive A) The workers have also had a part in the product concept development obviously because they are the ones who install the product in real estates. This way the installation routines have created changes for example in the installation process itself and in result of the time consumed, also pricing (Executive A). This would support Feldman and Pentland (2003) in their
argument that organizational routines have the capacity to generate changes. The regular meetings and discussions are documented and another tool frequently utilized is pads with which installation workers and sales persons can deliver data on real estates to their offices quickly (Executive A).

This also supports Winter’s (2003) result that dynamic capabilities are based largely on routines. Company 1 have taken a conscious decision to invest in routines: “routines are there to help in a certain way in order for a person to deliver a good result even in a bad day, that it is not a question how the person feels that a good performance level is maintained” (Executive A). This type of thinking, enabling personnel to work even in case of external pressures, has been noted by Gavetti (2005). It has to be acknowledged that pressures also bring reluctance to change routines but in this case routines itself are designed to develop the capabilities and do not seem to halt changes. This utilization of routines has seemed to work for company 1 but too far drawn conclusions should not be made on the long term effectiveness of the system due to the relatively short history in the business this way. If a company wants to utilize and be strategically agile it should not narrow its business path and market niche too much (Doz & Kosonen 2008: 219), especially in the long term.

Learning is also seen as a critical success factor by company 1 but learning is more to do with the wanted customer service quality (Executive A) rather than just the product concept development. "Customer experience relies on the quality of service. The more capable and understanding the employees are the better. It is a key capability.” (Executive A) Then of course the good customer service is part of the overall concept but management seems to want to develop employees thinking this way. By now much of the success comes with customer service and proactive service and good communication and professional behavior instead of mere technical know-how. Learning can be seen as a dynamic capability (Englehart & Simmons 2002) but it seems that in this case it is a capability to support the larger concept which has been mentioned to possibly be the dynamic capability with company 1.
Company 2

Company 2 as a very established firm has a number of documenting tools which are utilized. There is tracking system in sales, production and inventory management as mentioned. Confirmed sales go electronically through to production for arrangements and so that process is organized. (Executive B) The quick movement to production and the flexibility it gives to customers is a good strategic agility weapon. It is also possible to develop offers through information filed in on targets (Executive B).

In terms of routines the company focuses on its high season periods and prepares for them in advance. It is important to know when customers are ready to receive information and make future heating and energy conservation arrangements. The routines vary seasonally and tracking periods are currently under revision as how things will continue in sales. (Executive B)

It can be argued that company 2 relies more on anticipatory change management than managing through routines, though routines form a part of anticipatory change management (Ashley & Morrison 1997). The utilized systems produce many types of useful electronic data, and although the latest market information comes from customers, a large company needs to plan according to numbers as well. The entire organization is not quite yet aware of which direction the company 2 is headed but the newish boardroom is planning for it (Executive B). They would be looking to adjust resources to utilize them as well as possible and develop a future plan to gain dynamic capability or even competitive advantage, in similar way that Fulmer and Teegen (1995) have suggested. It remains to be seen whether the organization will look firstly to handle changes and unpredictability through people and inflowing information (Goldman et al. 1995) or focus more on effectiveness.

The decision making on important matters is on boardroom level now and slightly less accessible to work force than previous owner based management which actually resided in the same quarters. “It was possible to get decisions done by walking 15 meters to the next door.” (Executive B) However, the employees get more confidence in taking decisions are also allowed to fail trying (Executive B) so it would seem that there could develop a network or matrix type of organization
structure in the company 2 which brings outs more creativity from teams and personnel (Englehart et al. 2002). This progress is supported by Applegate (2001) who stressed the importance of giving employees responsibility to decide issues.

The manufacturing agility gained by the larger network will be in a large role, the way it is going to be utilized, in the company future success. The company is agile compared to its competitors and has been very agile for a long time but needs to develop price for this, to be also efficient enough in tough competition according to Executive B. The mentioned information systems between customers, sales and production in the case company 2 as well as its knowledge database are also theoretically backed to produce good outcomes, looking at Vasquez-Bustello et al. (2007) and Hooper (2001).

Learning in the business is important due to the quick development in the field. (Executive B) The company 2 being reasonably large, certain persons have profiled as experts in certain niches in company 2 (Executive B). “Nobody can know everything and therefore it is good that certain persons have become experts in certain areas.” (Executive B)

5.5 Strategic Agility in Industry

Company 1

There have already been numerous references towards strategic agility with company 1. The willingness to serve a customer well and a little bit even beyond the original contract (Executive A) is the starting point here. Strategic agility towards the customer is one goal and, as mentioned, part of the dynamic capability of the product concept. “We have received good feedback in some cases about our speed of reaction in their demand. The customer was not used to being able to progress with things in such speed. One really noticed there the significance of agility.”

Then an enabler for strategic agility in company 1 is the movement capabilities of the work force. Both sales and management and especially installation workers can be moved around, mainly domestically for short periods of time, when there is business
in one area and their local areas are quieter at that moment (Executive A). This operation is combined with pricing to ensure its profitability. If the company has a potential project, they can price it and do it and then see how long it took and how profitable it was and from there see if it is a direction with projects they want to continue with and with what price. (Executive A) If it is a newish type of project, the time it takes is longer than later often and the company can develop the profitability of that type of project by pricing accordingly. It has been shown previously (Mason 2010) that agile capacity usage operationally is related with overall performance and the fast growth which company 1 is experiencing is suggesting another positive situation in this case.

A vital point in the future for the company is indeed the selection of which opportunities to pursue in the future, as there are thousands of real estates in Finland only which are potential customers for the company 1. “There is a huge potential there and it does take time to get into it.” (Executive A) It comes down to knowing one’s own capabilities or core competencies (Long 2000) to best utilize the mentioned dynamic combination of them. In the really long term path dependency could be an issue (Schreyögg & Kliesch-Eberl 2007) but on the other hand the company 1 does not have large fixed resource commitments in my understanding and should not divert too early from a successful direction, rather diversify when the operation has grown large enough.

The company 1 has seemed to create an agile and especially different type of firm, which did not exist in the field before. They are actively looking to make things in new ways and differently and challenge the industry, be a sharp player out there (Executive A). They also actively seek and try to interpret information while at the same time looking to deliver the information to customers in understandable form, not always easy given the technicality of the product but this is countered by having sales oriented salesmen instead of technically oriented ones (Executive A). As a relatively small organization, which normally is the more agile ones, they are strong in some aspects of organizational agility mentioned by McCann et al. (2003). The information interpretation and transfer was already mentioned. The company is also employing a strategy where a new product development is sharply sold to a customer and then it is seen how well that direction works (Executive A) which is a mandate
for sharp action in the organization (McCann et al. 2003). As mentioned, there has been a large recruitment over the last couple of years and adjusting (Executive A) and readjusting these human resources is an important thing here, mentioned also by McCann et al. (2003). Company 1 also recognize the need to develop processes and their pricing (Executive A), which can be seen as a move to ensure their strategic agility also has a price to it and therefore it influences the dynamic product concept the other way too.

Company 2

The same influence of agility back towards dynamic capability applies to Company 2 as well. “We have traditionally been an extremely agile company towards customers but now there has to be a price for that agility”. (Executive B) That focus in that is therefore slightly altering in the near future but agility is still a big concept for a company which is still internationally relatively small. There is agility in the production and product development and sales departments still, although management’s flexibility is currently not yet very well-known due to that recent change.

The agility towards customers is possibly something which is altering in terms of the service side of it as the company has to look into how much time smaller customers should be served with (Executive B). On the other hand the agility towards customers can be seen to have grown with the integrated collection of products being now larger after the acquisition, although it is difficult to know how much customers need this extended offering of products as mostly the joined together companies have different set of customers (Executive B). If company 2 has good long lasting customer relationships, then these relationships are also likely to last this change (Goldman et al. 1995). Competitiveness of the company 2 has definitely improved with the mentioned cooperation work in sales in the new set up, also a strategic dimension for agility (Goldman et al. 1995). The company has already utilized its expertise and understanding of the market by moving sales persons flexibly to meetings where each person can best use strengths and knowledge he or she has (Executive B).
The resource advantage for agility can be created through a network (Yang et al. 2012). Agility in production and product development in this case comes through the acquisition bringing in almost double the staff and facilities in these departments (Executive B). It is a good situation as it is not yet too big to be a restriction for the company 2 although only time is likely show how much expenses are actually spared by own production factories in close proximity to Finland in Estonia. The close proximity does offer either the possibility of flexibility and the possibility of big bulks actually at the same time depending on what is needed but how competitively, it is very hard to say.

The product development has developed some product platforms for company 2 which can be utilized in different products (Executive B) and could be the beginnings for totally new products in the near future. That is an agility capability, which is very useful as the dynamic competitive field regularly throws updated and new products against them as an important agility driver (Zhang et al. 2000) in the industry.

At this point, it would appear that company 2 has a number of strategic agility enabling factors working for it, one more being that its operations are located in Finland and nations close by instead of being scattered round as maybe with some of its competitors. This should provide the chance of easy communication and quick learning across the organization. Looking at Hooper et al. (2001) ideas for an agile manufacturer, the only part missing is virtually operating company and then of course the new management leaves a question mark on how decentralized company 2 is or is not.

5.6 Further Discussion

The research showed that the field of business was a good one for this theoretical framework and research problem. The dynamism in the energy conservation field comes from many directions almost all the time: customers, competitors, national and international authorities like European Union, internal changes like restructuring through acquisition or change of personnel.
Looking at the main research question, I would argue that the previous sub chapters have shown how dynamic capability has a positive effect on strategic agility. With company 1 there has been a developing product concept which has brought success and growth in the relative short term through developing the concept constantly. The developments included changes in sales technique, installation work, recruitment of people and assets and short interval monitoring of company’s progress by the management. The combination of the processes has included learning and developing work routines and everything is working towards growth of that business which can be seen as good entrepreneurship. Although it is unlikely the company 1 have begun from the dynamic capabilities as an approach, it is certainly the type of theory which suits the company 1’s way of doing business as a form of analysis. Learning mechanisms are in place (Zollo et al. 2002) and what is also true there in my opinion is that the company has indeed transformed resources and capabilities to produce this product-service for real estate companies to conserve energy. This supports the way Wang et al. (2007: 36) wrote definition to dynamic capabilities although the company has not really worked changes “in line with industry’s changes” but more to create its own advantages which are flexible and constantly developed to stay ahead of industry’s changes. Teece et al. (1997) included this aspect of management handling in their theory, which is happening in both case companies in this thesis but in different ways.

The company 2 can be seen to utilize dynamic capabilities approach too but as mentioned by the Executive B there is a tendency to develop more towards efficiency than agility in the future although the company is very agile now. The company 2 has a very dynamic and much invested product development, which is now aided by more production facilities and more international sales offices making both of these concepts dynamic at the moment. The changes in the competitive environment have been met by acquisition led changes in the company 2, again similarly to Wang et al. (2007: 36).

The fact that the company 2 has grown steadily over the last five years suggests that the investments and focus in product development have given the company a dynamic capability, an argument supported by previous research results of Teece et al. (2009). The mentioned competition in that the company 2 may no longer be the
only significant player in their market niche (Executive B) does not remove this fact and the management of the company did find a way to be dynamically competitive, it just happened earlier compared to the other case company. However, the current situation in the markets suggests the ability to change and adapt has grown even more important than five years ago.

The figure 4 is given to simplify the research results. It is aiming to open the dynamic capabilities found in the case companies and how they influence strategic agility and in what ways. The dynamic capabilities have been assigned their origins in accordance with the empirical material and to comply with the definitions of dynamic capabilities which are concerned with nameable processes from which dynamic capabilities can be configured of (Teece et al. 1997, Eisenhardt & Martin 2000). The research also showed that a companywide perspective of strategic agility is not easy to have and mostly capabilities affect some part of that agility, as is shown in the graphic. Much of the contents of the figure have already been discussed through in previous subchapters.

**Figure 4. Dynamic Capabilities in the Case Companies and How They Influence Strategic Agility in the Companies.**

<table>
<thead>
<tr>
<th>Case Company 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic capability: Product concept</td>
</tr>
</tbody>
</table>

**Configured from:**

- Learning in sales, installation work developments, general learning in organization.
- Different, fresh service oriented approach to market. Introduction of a service company to traditionally product oriented field.
- Very often repeated internal routines and tracking of current and future work.
- Inventive product technology as a base.
Influence on Strategic Agility:

- Strategic agility in own market niche.
- Very fast reactiveness and flexibility towards customer requests due to size.

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Case Company 2

Dynamic capability: Product Development

Configured from:

- Gradually increased commitment in product development.
- Learning through active internal and external communication.
- Careful evaluation of competitors’ developments.
- New flexible and improved manufacturing capabilities in a nearer location.

Influence on Strategic Agility:

- Strategic agility in competitive qualities of the company.
- Customers aware of special capabilities if tailored solutions needed which are still easy to use.
- Ability for fast delivery of both smaller orders and bulks.
Case Company 2

Dynamic capability: Sales Organization

Configured from:

- New wider product catalogue.
- Different capabilities of sales persons.
- Flexible movement of sales personnel.
- Technical documenting and multidimensional tracking systems.

Influence on Strategic Agility:

- Strategic Agility towards customers.
- Company can combine efficient sales and flexible customer service.

The configured issues or processes are obviously the key things which in my opinion affect the strategic agility of the case companies, this way also answering the first sub question of the research along with sub chapter 5.5. These processes are considered to have a positive impact on the agility, as was the target or viewpoint in the beginning.

The second sub question on anticipating and preparing for changes has also been covered to some extent already but can be added to here. Both executives were of the opinion that it is possible to anticipate changes to some extent. Customer base is the main source of information but Executive A stressed the importance of company’s own activity in bringing in information. Competitor behavior was one issue which could sometimes be predicted on customer information and reacted to before it became an issue. There were differences in the companies’ approaches to changes in
market and although it is not the purpose of this work to compare there were a couple of notable issues. Firstly company 1 is looking to force reactions from the market by differentiating its business action models which Executive A argued actually makes it easier to react when needed. The company 2 situation is different in many ways with the ownership and market situation but the company is still aiming for very quick reactiveness and its structure allows decision making on most levels very swiftly.

The purpose of this chapter has been to analyze and answer. The following chapter concludes this work although some further analysis is included from theoretical and managerial perspectives.
6 CONCLUSIONS

The influence of dynamic capabilities in strategic agility of companies in the energy conservation and building heating technology has been the focus of study in this thesis. This thesis contributes to the international strategic management literature by exploiting the ideas of the dynamic capabilities research field and those of the strategic agility. This work has attempted to take note of as many authors as possible from these research fields within the limits of a master’s thesis.

There were no real starting points with the theoretical articles as such but soon it became clear that the thesis would much emphasize works by Teece (2007 and 2009), Eisenhard and Martin (2000), Wang and Ahmed (2007), Zollo and Winter (2002), Doz and Kosonen (2008) as well as Eriksson (2013). There are a number to mention really and also McCann et al. (2003, 2004 & 2009) and Helfat et al. (2003, 2007 & 2009) offered notable contributions to this work.

The thesis was not originally an attempt to develop a figure, as in figure 5, on the phenomenon but it turned out the best way to visualize the phenomenon in order to support the analysis text. In terms of international business works, it gave more evidence that figures and tables are a part of analysis in qualitative research on international business and management.

It was such a big surprise that the theoretical framework combined quite effortlessly with the interview material but a lot of credit goes the mentioned scholars and others who have developed these theories. I found there is a workable opportunity to analyze reasonable sized businesses, at least to some extent, by using these methods. I would actually like to conclude that by discussing a number of issues which theories brought up with real businessmen it really opened up how many issues and resources there are to combine and how people must communicate to develop these ensembles. For me this work showed how much can be learnt by interviewing professional people.
This chapter continues with research question answers, further conclusions and developed ideas on theory and for managers. The limitations of the study and suggestions for further research are included in the final parts.

6.1 Research Question Answers

Main question: How dynamic capabilities influence strategic agility in the context of a dynamic industry?

The research showed that certain types of what can be considered dynamic capabilities do influence strategic agility in positive ways in this context. The case companies had dynamic capabilities in product concept, product development and sales organization. A dynamic capability in product concept allows company to pursue most opportunities in its market niche and to meet customer requirements with a flexible and customer oriented service in a traditionally technically oriented business. This improves a company’s strategic agility.

Dynamic capability in product development in energy conservation industry allows company to tailor product solutions for its customers to a certain extent. Company can produce different amounts of goods to an extent, which improves its strategic agility too. Continuous investment and steady improvement of product development also enhance user friendliness of goods.

Dynamic capability in sales organization offers better strategic agility through dynamic sales personnel and wide product catalogue. Larger customers can have multidimensional needs covered in the same sales negotiation which is also definitely a strategic agility tool, although a company cannot carry too varied message or different message every time.

First sub question: What processes or actions create or enhance strategic agility?

Service oriented approach develops strategic agility in the context industry. By adjusting to customer demands with different offerings of products, personnel or pricing, a company can meet a variety of requests, thereby creating more strategic
agility. Not all opportunities can be pursued however, so learning and development of routines will help with acknowledging the correct possibilities. Technical enhancements in the field have enabled customers to receive quotes faster and companies have also improved strategic agility by directly linking the quotes to production, where upon confirmation they can be produced quickly.

Second sub question: *How can companies prepare for and anticipate changes?*

Companies follow many information flows, the most important being the customer. That is the place where many important changes can be identified and anticipated from. Also companies can make preparations by following and taking part in authorities’ negotiations and decisions. Internal decision making structure affects companies’ strategic agility so if management wants to implement changes they need to be hands on in receiving and interpreting information. The research did not deliver information on how companies interpret their own created information like sales annually and other data.

### 6.2 Theoretical Implications

#### 6.2.1 Dynamic Capabilities in Case and Theory

The sub chapter 6.2 will discuss some of the identified main theoretical reference points and the connections these have had to the case and findings of confirming some of the statement. Here in the beginning there is a conclusive discussion on dynamic capabilities in case and theory, and then it is on to a similar discussion on strategic agility and finally overall discussion.

Company 1 had a stable basic technology on which they have built a concept by developing everything else like pricing, marketing and installation procedures. This is an indication that dynamic capabilities require some good quality stable element(s) in order for them to be best utilized. The existing basic technology is a structure, a micro foundation or even an antecedent from which dynamic capabilities are formed from, similarly to what Wang and Ahmed (2007) and Teece (2007) have written. The stability of it, that it has remained the same in terms of its technology, was something
that did not directly come up in earlier studies. Strategic agility though, requires also stabilizing factors (Long 2000) which in my opinion supports this finding in the context of dynamic capability influence on strategic agility. Therefore, as suggested in the methodology chapter, there is influence in both directions of these two main concepts.

For antecedents of dynamic capabilities, the results reinforced the importance of organizational learning, individually and in teams. People can talk about their experiences in regular team meetings and thus everyone can learn. This thesis has included much argument on routines but the research in my opinion showed these experiences can come from both routines and new customers and situations. Becker (2004) mentioned reliance on routines as a potential problem but this was not so much so in case companies. More challenges posed employees attitudes towards industry. They must try and move along with the developments, not stagnate in thinking. In fairness to Becker’s work and the ambiguous definitions of routines, in a way thinking patterns are also routines which have to evolve.

The subject of this thesis was such that there was not a graph already which could have been directly adjusted here on the basis of the research results. In the theory chapters there were a number of figures but they did not directly fit in to the latter parts of this work, although the contents of Figure 2 (Hung et al. 2010) have been reinforced by what the research in this thesis showed.

In the future it is possible to utilize a similar graphic as the figure 4 in chapter five. In the following page’s figure there is the theoretical version of the same thing. It is a shortly versed graphic on what have been considered the main theoretical points in this thesis and one can potentially utilize it for a similar analysis on a company. As has been shown, the graphic includes naming of the capability, opening up process from which it is configured from and leads down to how it has an effect on strategic agility and what part(s) of it. As in the chapter five, the contents of this type of graphic are written down and explained and argued before or after the graphic itself. As in a SWOT analysis, it is a tool to simply clarify the main contents in an easily researchable form.
### Figure 5. Theoretical Set Up of Dynamic Capability Influence on Strategic Agility of a Company.

<table>
<thead>
<tr>
<th><strong>Case Company</strong> (from a dynamic business field)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dynamic Capability</strong> (For example this can be defined as “firm’s ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments” (Teece, Pisano &amp; Shuen 1997: 516). It can be a nameable process like strategic acquisitions (Eisenhardt &amp; Martin 2000).))</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Configured from:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>This part can include processes like organizational learning, routines, different types of investment, human resources, new technical knowledge, customer service skills from which the dynamic capability is combined from.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Influence on Strategic Agility:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agility is a well-covering answer to a dynamic business environment which is littered with fluctuations and unpredictability. (Goldman et al. 1995) This part can include the explanation on in which ways the dynamic capabilities opened up earlier influence company’s strategic agility, and more specifically which strategic agility areas. These areas should open up during the research.</td>
</tr>
</tbody>
</table>

The time frame and boundary condition differences that Peteraf et al. (2013) identified in the important articles by Teece et al. (1997) were not solved by findings in this research. It is very difficult to say how long and well the advantages created by the dynamic capabilities of the case companies will last. It is equally difficult to say how unique or scarce resources the companies possess although the dynamic capabilities of the case companies have taken some years to create and therefore only larger companies can copy them faster. However, the main arguments of theoretical definitions of dynamic capabilities are difficult to deny in my opinion.

In my opinion this thesis has shown, that both articles which Peteraf et al. (2013) discussed, had correct reference points and indeed many issues were originally seen
similarly in these articles as well as well as the other important theory articles in relation to this thesis. The following sub chapter continues more on strategic agility theories and their final reference points in this thesis.

6.2.2 Strategic Agility in Case and Theory

Strategic agility is visible in both case companies. As mentioned by McCann (2004), agility is shown by both of these companies with continuous monitoring of sales and other external situation developments and making resource changes on that basis. The timings and frequencies of these assessments seemed to differ though. Generally on the basis of strategic dimensions (Goldman et al. 1995) the depth of agility in case companies is hard to evaluate just on the back of interviews. Both stressed the need to enrich, give added value and create long term with customers, and also cooperative work. Unpredictable future is handled in case companies by anticipatory actions and business development and information inflow is valued as well. The required depth of all this input and the need for it is left a bit open in theory (Goldman et al. 1995) but it can be stated that generally the case companies do lean on agile approach.

Many of the factors that enable agility in theory were actually present in case companies according to the interviewed executives. Information inflow and its interpretation (McCann and Selsky 2003) were present in different time frames in the companies, who also presented a number of ways to access information which McCann et al. (2003) also identified as a need for strategic agility. Adjusting the human resources, particularly in sales and production units was a weighed requirement in case companies as well so most of the article’s theses were confirmed in this case too. The final agility enabler (McCann et al. 2003) on sharp action is missing the time frame or scheduling on its meaning and same can be said on case companies: how fast actions are taken seemed much company by company for me. Time frame for “sharp action” may be industry specific also.

The overall organization structure discussion (Englehart et al. 2002) did not open up in case companies in terms of their structures impact of agility, whether the companies’ structures were considered flat or more hierarchical did not seem to
impact the interviewed executives too much regarding the capacity for agile strategies.

Hooper et al. (2001) positioned customer desires as the base for strategic agility requirements and I would say it applied to the case companies too. Being based in Finland generally does not enable low priced production or sales and this reinforces the need for agile manufacturing as well, as well as acts as a type of agility driver (Zhang et al. 2000). Agile human resources were already mentioned with case companies but the other items if Figure 3 did not come fully into light in research results and analysis. For an outsider, evaluating the state of markets which Vasquez-Bustello et al. (2007) widely discussed, seemed as difficult to pinpoint considering its impact on the agility requirements of case companies. Mostly it seemed that the strategic agility the companies felt they needed was already in place, a situation where no agility increasing action was urgently needed (James-Moore 1996).

Continuing on Zhang et al. (2000) reasoning, agility capabilities providing were indeed dynamic here, the dynamic capabilities which have been mentioned in the research question answers sub chapter. Also agility providers, as has been analyzed before, came from four main categories of organization, people, technology and innovation as previously found by Zhang et al. (2000).

The attitudes and abilities of management (Gardiner 1996, Imoniana 2006) were present when discussing the case companies’ strategic agility. Companies clearly felt they needed certain flexibility, especially with customer services but a price was also needed for agility. There has to be a limit for extras and services regarding a deal, and the results reinforced the belief that management have to be hands on with economic requirements (Kennedy 2003) as well as the willingness to service customers. Even though these articles (Gardiner 1996, Kennedy 2003 & Imoniana 2006) can be classified under dynamic capabilities and strategic management, in this way they can be seen to discuss strategic agility as well, arguably talking about the same overall phenomenon in targeting successful company management.
Many of the most important referenced strategic agility articles, as has been shown, had reference points in the case of this thesis. The following part concludes the final notes on theory and case relationship in this thesis.

6.2.3 Final Theory Implications

Englehart and Simmons (2002) identified dynamic capabilities as a powerful approach towards strategic agility and the results in this thesis support this opinion. Dynamic capabilities which have been mentioned with the case companies are attributes which are developed quite constantly and according to the interview material suit the required strategic agility. The empirical research has showed the dynamic capabilities on strategic agility approach suits the energy conservation industry as a theoretical research base and therefore reinforces the early ideas of Teece et al. (1997) and indeed Englehart and Simmons (2002).

Englehart et al. (2002) also wrote about the importance of organization’s structure and policies regarding its strategic agility. In this research the consensus was that the company policy is the more important factor. Even a large company like Company 2, for a Finnish company size, can be an agile one as long as the strategy and management policy allows this. In multinational corporations it will be different, even according to the interviewed executives but in companies of this size it relies much on management decision making as remarked by Fulmer and Teegen already in 1995 and Pentland et al. (2005). McCann and Selsky (2003) reinforced this by adding the importance of information flow and interpretation along with emphasizing company culture.

The argument that a company’s ability to change and adjust quickly has grown in importance (Schreyögg & Kliesch-Eberl 2007), is supported by the findings in this thesis. I believe the dynamic situation has gone even further from what they researched. One must actually sustain a set of capabilities quite consistently while also attempting to adjust, develop and change when needed or seen possible. Executive B actually hoped it would be possible to be “efficiently agile”, which probably is a good requirement for companies in energy conservation industry today.
Theoretically there were not many other issues which appeared in interviews or during the analysis. One more issue came up, which was towards the dynamic capabilities theories. Dynamic capabilities theories did not seem to emphasize much about what success is if there is a company which is seen to use the dynamic capabilities approach. In this thesis I argued that steady growth in a dynamic field can be seen as successful use of dynamic capability. Very fast growth of company 1 could also be seen as successful use. There are always other issues as well affecting a company’s acumen and it becomes a question of definition which issues are to do with dynamic capabilities. Having mentioned that, the results still confirm to Eriksson’s (2013a) findings that the use of dynamic capabilities improve anticipation and performance of the firm. This happened partially because of strategic agility was also in place in case companies.

To conclude the findings of this thesis in terms of theory is firstly that it has reinforced a number of earlier studies from different business fields, in the field of energy conservation and particularly with two Finnish companies. In this dynamic industry it was possible to identify some dynamic capabilities and their influence on strategic agility. Some stable elements were identified in dynamic capabilities but how necessary these are overall with dynamic capabilities is difficult to say.

Some indication was also found in the other direction that strategic agility arguably impacted the dynamic capabilities. This turned out both in the research analysis as well as by studying the theory articles which discuss some of the main elements regardless under which discuss they categorically belong to. Items from both main theory fields can be utilized in the same analysis and even same figure.

6.3 Managerial Implications

Turning the situation around, from this thesis it is possible for managers in this industry to get some idea on the requirements in the dynamic field of energy conservation and building technology. The research clearly showed the need to develop capabilities and keep developing existing capabilities regularly in this industry and also showed some of the capabilities which can develop the also required strategic agility. The research also implied that routines can bring
development and that routines should be looked to be developed and helped with technology.

Utilizing routines and realizing the boundaries of what can or cannot be pursued was proved important in energy conservation industry, similarly to what Abell et al. (2008) wrote. It costs money and time to develop and maintain routines but due to the technicality of the products there usually needs to be a structured way in doing business. As authors have pointed out (Becker 2004, Feldman & Pentland 2003) ad hoc problem solving also costs money and in a dynamic industry, although agility is required, there must be a consistent way which enhances development of capabilities. I would argue that despite needing to be flexible, a company should also develop consistency especially in decision making and communication.

Continuing from this, the responsiveness to messages is limited by people and this will force down the speed of change implementation. Executive B mentioned that sales persons have occasionally trouble to deliver needed information around electronically, while both Executives A and B mentioned the issues in the way that customers can understand new attributes and technology in new and updated products. Even if there are changes taking place, the message internally and externally cannot always change or companies risk unsettling stakeholders. In researches on other industries, Long (2000) and Goldman et al. (1995) arguably offered a way around this problem by making sure stakeholders are involved enough in changes by good communication and it must be said the case companies are utilizing this a lot as well; by being flexible and many of the developments are founded by customer feedbacks for example.

A conscious utilization of the theoretical concepts of this thesis is likely to be hard for managers but in developing and new industries the issues that have most weight must be recognized and the whole picture managed through effective combination of resources and processes. It requires a lot of diligence in planning and a lot of motivation. The issues in this thesis can help with recognizing the whole picture of requirements in a dynamic industry. Due to a positive approach this thesis did not bring up negative results of strategic actions but as is often said, even a failed negotiation or action brings something for the company.
6.4 Limitations of the Research

The research results are based on interviews of company executives and the author’s analysis on those interviews as well as the theoretical chapters. To be more precise and knowledgeable on the companies would have required tracking their work in further means such as more interviews or time spent absorbing the work in the firms. The limits in time and resources constrained the work to its current format, in terms of its construct validity (Yin 2014: 46). It was considered that another company connected to the business of especially company 2 could have been interviewed but the author did not receive this opportunity from them. Executive B did also mention that they did not believe this work would have produced any further dimensions as they are in practice part of the same corporation now.

A limiting problem regarding internal validity (Yin 2014: 46) may be a reliance on interviewees regarding the empirical material, but the persons were very professional in their conduct. As mentioned by Executive A, the industry cannot be researched from secondary data very well, so access to all relevant material can be seen as restricted here. This in my view was countered in some ways by good access to all the theoretical data on the structure.

The confidentiality issue I do not believe have been a problem as the executives knew where the material would be utilized and knew therefore what types of issues they could discuss. Research validity is arguably increased by the author’s lack of previous experience in the field. I have done my best in discussing the material in a clear manner with no favoritism and the fact that I did not know beforehand helped this as there were no assumptions.

The reliability of the research is limited by the fact that in order to capture the required information, it was necessary to add questions during the interviews instead of only using the prepared questionnaire. This makes replicating the process more difficult. The theoretical data collection method has therefore not been in a fully structured way, such as Yin (2014) constructed, either but more to the possibilities and necessities within a master’s thesis.
The figure 5 and the research results imply that this theoretical analysis base is more functional when utilized to one company individually although that is just author’s conception of how the work went. Generalization externally was difficult due to the material differences semi structured interviews gave as executives answered same questions from different angles, to mention the main issue there. That was also a reason why no other companies were included into the thesis, as it seemed not possible to aim for documentable generalization within reasonable work. As mentioned the aim was therefore to analyze the companies mainly individually.

The other restrictions were to some extent time, more so resources and available professional people. There was also definitely a decided focus on theory compared to the empirical part which was the main restriction on time allocated to the empirical part.

The thesis has combined the theories in a general way but is limited in the amount of details of why and how dynamic capabilities influence strategic agility from the theory background although the analysis was possible to be completed after the empirical part. International business is a part which has stayed low profile in the analysis. The competition in the industry, both domestically and internationally, could only be described in general terms. The strategic agility and how it is utilized would have needed more weight on it but the focus is on the combination of the two concepts.

6.5 Ideas for Further Research

The combination of dynamic capabilities and strategic agility theory has not been used overly much in the past and could be a useful option when researching other dynamic business fields in the future. It actually seemed uncanny how well the two theories combined even in the empirical part. Finnish companies have to strive to agility to some extent and the whole operation has to be targeting the same goals, so dynamic capabilities can be used as a research theory too. It would be interesting to see similar research in other industries or international companies.
The type of graphic such as figure 5 should be more tested to see whether there would be more firm concepts on it, empirically or theoretically. How one can find out its contents, especially the dynamic capability would in my opinion need further development. As has been shown in the dynamic capabilities chapter, some researchers argue they are hard to spot from the outside and some argue they are hidden in the organization’s processes. The dynamic capabilities research could still do with proven instructions on semi structured interviews as how to best capture dynamic capabilities. Doctor Taina Eriksson (2013) of Turku School of Economics mentioned this problem of “capturing dynamic capabilities” during this research to the author. I do not consider the issue to have been such a bad problem in this thesis, but indeed I would stress that figure 5 could be aided by designing a proven questionnaire for dynamic capabilities research. Backed by the theoretical material gathered for this thesis, I believe it was within my chances to outline some dynamic capabilities for the case companies here after the interview information was analyzed. One can argue that two companies in different stages of their “lifecycle” could not provide a base for such a figure 5 but it was the industry more in focus and in any case it would be tough to find two very similar companies in most fields in Finland.

In today’s business, a company or a scholar could do research on a market’s dynamism, there is no question about that. In my opinion, knowing and being able to anticipate where most of the changes in the markets come from is important for business people. Whether those would be authorities, competitors or customers, understanding this will only help the company in its future planning and anticipatory change management. In reality experience will help to develop this understanding in a company but it can be argued that “a bulk” of information provided by a research could only help.
REFERENCES


Hughes C (2004) Proactive or Reactive Management? Lp-Gas 64(3): 14-


2 Interviews done with company executives in the energy conservation field done between December 2013 and January 2014

Secondary sources related to the case companies