Family Business Adaptation to Disruptive Technology

Case Studies on Family Businesses in Handling the Challenges of Disruptive Technology and Maintaining Competitive Advantage within a Swedish Market

BACHELOR THESIS WITHIN: Business Administration

NUMBER OF CREDITS: 15 ECTS

PROGRAMME OF STUDY: International Management

AUTHOR: Jessica Sandlin

TUTOR: Dereck C. Lörde

WORD COUNT: 19,980

JÖNKÖPING May, 2017
Acknowledgements

I would like to thank several people whose contributions were key to the completion of this work. First, I want to thank the businesses who participated in the study, this paper would be impossible without your cooperation, and willingness to help. I also would like to thank Bonne Tilosius who was instrumental in connecting me with the family businesses, going above and beyond what I ever imagined. Next, I would like to extend my gratitude to Gershon Kumeto, my thesis tutor at Jönköping International Business School (JIBS), who has supported me with insightful feedback and thoughtful criticism throughout the process, and always kept a smile on his face through ups and downs. Additionally, I would like to thank Anna Sandlin, for the editing and translation when it came to the Swedish language aspect of the study, as well as motivation, smiles, and brownies. Finally, a great thanks to both David Sandlin and Nikolay Nikolov, for both keeping me sane and calm during this process, as well as providing continuous feedback, grammar editing, and being sounding boards. I could not have done this without all of these peoples’ help.
Abstract

Disruptive technologies continue to pose challenges for industries worldwide, and firms are constantly learning how to adapt in order to remain competitive. Family businesses are not immune to these “shocks” in their industry, and they too need to harness the potential advantages of novel technology just as much as corporations do. While there is extensive research on the methods and strategies employed by multinational corporations, the study of how a family business could or should adapt is virtually unexplored. There is a need to understand the intricate decision making process of business leadership in dealing with disruptive technology, particularly in regards to maintaining or gaining a competitive advantage. This study conducted in-depth qualitative interviews with three Swedish family businesses, all who were successful in adopting disruptive technologies to their benefit. Although each of the businesses took different paths for technology adaptation and to maintain their competitive advantage there was a consistent thread in the leadership strategy. The results revealed that strong family leadership, in the form of stewardship, was essential to maintaining their competitive advantage while dealing with the challenges of disruptive technology. Stewardship places emphasis on family core values, the drive to improve the performance of the business for the benefit for family and the employees, and a commitment to long-term goals. Stewardship proved to be the determining factors for these families in their successful disruptive technology adaption.
# Table of Contents

**Chapter One: Introduction** ................................................................. 6
  1.1 Background .................................................................................. 6
  1.2 Problem ....................................................................................... 8
  1.3 Purpose ........................................................................................ 10
    1.3.1 Research Questions ............................................................. 10
    1.3.2 Research Method ................................................................. 10
    1.3.3 Research Contributions ....................................................... 10
  1.4 Delimitations .............................................................................. 11

**Chapter Two: Frame of Reference** .................................................... 12
  2.1 Research Section ......................................................................... 12
  2.2 Literature Review ........................................................................ 12
    2.2.1 Disruptive Technology ......................................................... 12
    2.2.2 Family Business .................................................................. 16
    2.2.2 Theoretical Perspectives on Adaptation to Disruptive Technologies .................................................................................. 18
      2.2.2.1 Strategic Adaptation to Disruptive Technologies .......... 18
      2.2.2.2 Competitive Advantage Strategy Theories .................. 22
      2.2.2.3 Theoretical Impacts of Family Influence on the Business Strategies ................................................................. 24
  2.3 Theories Applied in the Study ...................................................... 26

**Chapter Three: Methodology** ............................................................ 29
  3.1 Methodological Approach ............................................................ 29
    3.1.1 Philosophical Stance: Interpretivism .................................... 29
    3.1.2 Theoretical Approach: Inductive, Deductive, and Abductive Approaches ................................................................. 30
    3.1.3 Research Method: Quantitative and Qualitative Methods .................................................................................. 32
  3.2 Research Approach and Study Design: Case Study ....................... 32
    3.2.1 Data Types: Primary Data and Secondary Data .................... 33
    3.2.2 Case Selection and Data Collection ..................................... 34
      3.2.2.1 Case Selection ............................................................. 34
      3.2.2.2 Data collection: Interviews ........................................... 35
    3.2.3 Data Analysis ........................................................................ 35
  3.3 Research Validity and Reliability .................................................. 36
  3.4 Ethics .......................................................................................... 36

**Chapter Four: Data Presentation** ......................................................... 37
Chapter Eight: Contributions and Limitations of the Study ........................................... 53

8.1 Contributions to Theory ................................................................................................. 53
8.2 Contributions to Research and Practice .......................................................................... 53
8.4 Limitations of the Study .................................................................................................. 54

References ......................................................................................................................... 55

Appendixes .......................................................................................................................... 64

Appendix I: English Interview Questions ............................................................................. 64
Appendix II: Swedish Interview Questions ........................................................................... 66

Table of Contents: Tables
Table 1: Summary of Adaption to Disruptive Technology Strategies .................... 22
Table 2: Summary of Competitive Advantage Theories ........................................... 24
Table 3: Summary of Family Influence Strategies and Theories ............................... 26
Table 4: Summary of Theories used in Study ................................................................. 27

Table of Contents: Figures
Figure 1: Porter’s Competitive Advantage Matrix ........................................................... 23
Figure 2: Family Influence on Adaption and Competitive Advantage ..................... 51
Chapter One: Introduction
In this section the reader is introduced to the topic the problem explanation, and intended purpose of this study. Finally, this section concludes with definitions and delimitations for this study.

1.1 Background

Technology continues to evolve and redefine business processes, requiring companies to find new ways to adapt to the ongoing changes, if they wish to remain competitive. This rule applies for enterprises of all sizes, resource availability, and market reach, and especially as it relates to family businesses (Astrachan, 2010; Ward, 2004, 2016). As technology in all of its disruptive incarnations lays the foundation and determines the rules of business, it is critical that leaders in both multinational corporations (MNC) and family businesses adopt an innovation-friendly mentality, and adapt to technology-enabled commerce (Chrisman, Chua, & Pramodita Sharma, 2005). This has never been truer than now with the increased speed of changes in all industries, from technology to manufacturing (Chrisman et al., 2005).

Businesses face a variety of challenges, ranging from the inception of new goods and services, to their introduction to the market, channels of distribution, process management, and fostering future innovation (De Massis, Frattini, & Lichtenthaler, 2012). This applies particularly to family businesses, which lack safety mechanisms to absorb industry and demand shocks that a majority of MNCs possess (Chrisman & Chua, 2005). Repositioning an organization to handle a transforming market has historically proven difficult, even for MNCs, and it is fascinating to see how a family business devises and implements these changes (Srinivasan, Lilien, & Rangaswamy, 2002). Family businesses are often more nimble and organizationally lighter, however are often faced with rigidity, and an inability, or unwillingness to acknowledge technological advancements (Srinivasan et al., 2002).

Family businesses have a substantial impact on the world economy. Making up eighty to ninety-eight per cent of all businesses and employ between half and three-quarters of the global workforce (Poza & Daugherthy, 2014), which has led to a growing interest in this research field (Chrisman et al., 2005). Perhaps one of the more interesting aspects of family businesses is that the interaction, overlap, and ties among the family and the business that create a unique structure, culture, and environment, which is not seen within other firms (Chrisman & Chua, 2005). Furthermore, there is a greater interest in how family businesses react to changes in the industry, particularly in the regards to the methods these enterprises utilize to cope with radical shifts in their competitive landscapes (Benavides-Velasco, Quintana-García,
Guzmán-Parra, 2013). Unquestionably, there is a wide array of research questions which need to be further developed when understanding the interworking of a family business.

For the framework of this thesis it is important to understand the following terms and definitions used throughout the study. These terms are “Family Business”, “Disruptive Technology vs. Innovation”, and “Adapt/Adaptation”. These terms are selected since they are definitive to both the problem statement and the research questions. If any other terms arise in the text then they will be defined on an as needed basis.

Arguably, **Family Business** is a research topic in and of itself with a wide array of definitions defining it as the culture within a firm, to others explaining it as an internal structure (Benavides-Velasco et al., 2013). A general consensus scholars have on this topic is that the family is somehow at the core of the business wither that be operations, or ideas. In this study family businesses are defined by the ownership structure and will be as follows:

> “influence in a substantial way is considered if the family either owns the complete stock or, if not, the lack of influence in ownership is balanced through either influence through corporate governance or influence through management” (Ampenberger, Schmid, Achleitner, & Kaserer, 2013, p.158)

The second term **disruptive technology** often gets confused with disruptive innovation, Christensen is the leading theorist, and created both terms. The first term describes the tangible aspects of disruption, while the latter encompasses both the tangible and intangible aspects. In order to provide the clearest definition on this, the study will use the following definition which is Christensen’s original definition interpreted by Tellis.

> “Disruptive technology [significantly alters the way a business operates] steadily improves in performance until it meets the standards of performance demanded by the mainstream market. At that point, the new (disruptive) technology displaces the dominant one and the new entrant displaces the dominant incumbent(s) in the mainstream market.” (Christensen, 1997 as interpreted by Tellis, 2006, p.34)

The final term used in this study is adaption/adapt, which refers to the transitional link between family businesses and the disruptive technology affecting it. The Cambridge Dictionary defines adaption as “something produced to adjust to different conditions or uses,
or to meet different situations” and adapt as “to adjust to different conditions or uses, or to change to meet different situations” (Dictionary, 2016).

Having established the framework of this paper, which is the study of the effects of disruptive technology as it forces a family business to adapt the next consideration is the scope of the problem inflicted on the family business by the disruptive technology. The next section will discuss the problems or questions that arise during this study.

1.2 Problem

Although there is quite a bit of research on disruptive technology and a large amount of research focused on family business, there is little to no research conducted on the topic of how disruptive technologies cause changes within, or impacts a family firm. Furthermore, there is no documented research on how a family business adapts to the changes posed by disruptive technologies. These gaps in the body of knowledge and lack of understanding lead to the core question that this study aims to solve is as follows: “How do family businesses maintain competitiveness while adapting to disruptive technologies?"

Generally, family businesses have goals and values that set them apart from non-family firms; for example, desire to protect future generations and long-term orientation are often associated with family ownership (Ampenberger et al., 2013; Chrisman & Chua, 2005). Additionally, being free from shareholder pressures, family businesses are a vehicle of more than profit maximization and often determine success in broader terms (Zellweger, Nason, Nordqvist, & Brush, 2013). Through family ownership, the controlling entity has a much higher degree of freedom to implement values, clearly communicate goals, and create a coherent culture within their organization. Thus, family businesses often create value in both a commercial and social manner, whereas MNC are less likely to have a social focus (Bondy, Moon, & Matten, 2012).

Despite the large variety of structures, organizations, and business practices within family firms, academic studies show that they do have shared characteristics, which are clearly distinguishable from non-family business (Kuo, Kao, Chang, & Chiu, 2012). Apart from their ownership structure and form of corporate governance, this type of enterprise has been shown to be successful in better understanding local markets, utilizing cooperative organizational systems, and streamlining the decision-making process (Astrachan, 2010; Kuo et al., 2012). This all plays a role in a company’s ability to recognize the emergence of a useful disruptive
technology, its effect on the competitive landscape, interaction by rivals, and ultimately, adaption. It is reasonable to assume that, if a family firm is able to capture the value of a disruptive technology early on and integrate it within the company they would have more of a competitive advantage (Christensen & Overdorf, 2000; Danneels, 2004).

A part of the broader financial services industry, accounting is a range of services centered on bookkeeping and financial reporting. It has been critical for this industry to keep up to date with new introductions, mainly in handling new financial regulation, and recently, digitalization has played a defining role in this sector (Barnatt, 1998; Fasnacht, 2009; Preda & Centia, 2005). A key factor to the success of any accounting business is building profitable long-term relationships based on trust and credibility. Given the scandals of the early 2000s, including companies such as Enron and Arthur Andersen, clients demand more commitment to ethical business practices and adherence to regulations (Gini, 2004).

According to Abellanosa & Pava (1987 p. 1), agriculture is the “growing of both plants and animals for human needs.” There is an argument that the history of human development is largely the history of agricultural development (Abellanosa & Pava, 1987). The industry is principally defined by efficiency and optimizing processes at all levels. Recently, automatization has fundamentally revolutionized the way in which companies operate. The ability to adapt to new business practices, implement them successfully, and producing comparatively larger quantities in the shortest period of time, have defined the winners and losers in this industry (Ford, 2009; MacDuffie, J. P., & Karfcik, 1992).

The forestry industry is a rather large industry worldwide, and a term which ranges from conservation of forests to the use of them for timber, paper, or scientific research (Henkel, 2015). In Sweden, where forests cover approximately sixty percent of the country, the forestry industry and makes up one fifth of the country’s GDP (The Royal Swedish Academy of Agriculture and Forestry, 2015). Similar to agriculture, techniques to ensure efficiency and higher production have driven the advancements. What is truly unique about the industry in Sweden is the fact that half of all forests are owned by family enterprises (The Royal Swedish Academy of Agriculture and Forestry, 2015). Given the high emphasis on sustainability in the region, many developments in the field have stemmed from such companies in their pursuit to be better stewards of the forests (Hansen, Panwar, & Vlosky, 2013).
As this study aims to illustrate how current family firms within these three industries have been successful in their adaption to disruptive technology, it is necessary to look deeper to understand the discussions, decisions, and processes they used in order to maintain their competitive advantage. Additionally, understanding the existing information on the theories, and applying those theories to these successful firms, which have adapted to a disruptive technology, will be instrumental in developing a comprehensive study for other organizations to potentially use as a map when faced with new disruptive technologies.

1.3 Purpose

The purpose of this study is to explore how family businesses adapt to disruptive technologies. This includes investigating which strategies family businesses use to maintain competitiveness within their industries. It also seeks to identify what the main factors that influence family businesses are, during the strategic decision making processes specifically in relation to disruptive technologies.

1.3.1 Research Questions

One: What strategies do family businesses use to adapt to disruptive technology?

Two: How do family businesses maintain competitiveness while adapting to disruptive technologies?

1.3.2 Research Method

This study utilizes a multiple exploratory case study approach for a comparative analysis of three family firms’ adaptation strategies to disruptive technologies. The study looks at three family firms in different industries - financing, agriculture, and forestry. In an attempt to understand if there is a universal approach for family firms, or is it up to the individual business.

1.3.3 Research Contributions

The study aims to help family businesses understand how other family firms adapt to disruptive technologies, and how they identify the disruptive technology; integrating it for the greatest success within their organization. Additionally, during the research process some foundational truths about both disruptive technologies and family firms will be better understood, contributing to the information on how other family firms will be able to identify, react, and adapt to future disruptive technologies. This study is written with the intention to add to the field of research on disruptive technologies, and family business and hopefully help
current family firms understand and confront the challenges they face due to disruptive technologies.

1.4 Delimitations

As mentioned previously the area of family business is a rather large and difficult to understand comprehensively, which is why it is important for this study to narrow the variables as much as possible. Firstly, since the interest is disruptive technologies, it is necessary to narrow down which type of business structure would be studied. Furthermore, since the author has a personal interest in family businesses, and due to the lack of research in this area it seemed pertinent to study disruptive technologies within the context of family businesses. Secondly, the decision to narrow down the geographical area of the organizations studied was not only for accessibility, but also to simplify the selection process. The geographical region was narrowed from global, to Europe, to Nordics, to Sweden, with the focus on Jönköpings län in southern Sweden. This seems reasonable, considering the large amount of family firms in a wide array of industries in this geographic area. By narrowing the geographic area, it reasonably limits the number of family businesses which are open for potential study. The decision to narrow the study from just family firms to family firms within the three specific business sectors, was in order to ensure that the sample size was not too large to comprehend for the scope of this study, but still diverse enough that reasonable generalizations can be extracted.
Chapter Two: Frame of Reference

In this chapter a review of the existing literature on the topics will be discussed, highlighting the important theories and ideas. Lastly, the theories which will be applied during this study will be brought up.

2.1 Research Section

In order to acquire the necessary research material for this work, searches were conducted using keywords. These keywords included “family business”, “disruptive technology”, “business strategy”, and “competitive advantage”. The material was discovered through searching Google Scholar and Jönköping University’s online library. Additionally, the Library’s extensive databases on management and leadership were used. A great deal of both information and inspiration for this study originated from the Family Business Review.

2.2 Literature Review

Since the objective of this study is to explore the question “How do family businesses maintain competitiveness while adapting to disruptive technologies?” It is essential to understand current research on Family Business leadership styles, to comprehend the nature and scope of disruptive technologies and explore the methods and speed of adaptation. Although there has been little research on the interplay of these factors there has been considerable research on each of these topics individually. The following sections go into detail on the existing information, theories, and concepts about the main topics within this study.

2.2.1 Disruptive Technology

The concept of disruptive technology has been around for quite some time, and while the term was not developed until 1995 by Christensen, the concept had been explored. This can be seen in Alvin Toffler’s books Future Shock, The Third Wave, and Power Shift; the first book was written the 70s, where the effects of disruptive technology were articulated (Toffler, 1970, 1980, 1991). Disruptive technology as a theory is arguably underdeveloped since the term was only first introduced in 1995 by Christensen, then develop further by him and Raynor in 2003. Christensen has been credited with coining the terms disruptive technology and disruptive innovations, but the author admits that he was heavily influenced by Toffler’s books, which looked at the shock a new innovation can have on a business, or industry. Since this theory is less then twenty-five years old there is still quite a bit of research and development needed.

One aspect to note on this theory is the previously mentioned point: there is a difference between disruptive technology and disruptive innovation. Specifically, disruptive innovations
refers to everything from ideas, processes, production, and products/items, while disruptive technology discusses only products/items, in other words, disruptive technology is a more specific subset of disruptive innovations. This is once again being pointed out because the existing literature on disruptive technology is often confused with disruptive innovation, and when being discussed in this literature review the authors may have used them interchangeable. In fact it was quite a source of controversy in the research field during the mid-2000s, and attempting to determine the difference between the two was rather difficult until both Tellis, and Christensen published articles on the differences between the two terms.

While it has been said time and time again by authors and researchers alike that disruptive technologies are difficult to predict, and there may be some concession that a few organizations every so often see the benefits of the technology early, it was pointed out as early as Toffler that there are recognizable patterns in determining disruption (Toffler, 1980, 1991). While Christensen considers this point in his early research he later on disagrees with it, stating that industries and technology are evolving to rapidly in order to determine if there is a pattern in identifying a disruptive technology (Christensen, & Raynor, 2003; Christensen & Bower, 1996; Christensen & Overdorf, 2000). Toffler pointed out that rapid developments in anything end up creating a “shock” of sorts and in order to mitigate these shocks one needs to determine a likelihood of when they may come up (Toffler, 1970). In order to do this Toffler insisted on the importance of recognizing patterns that lead to a disruptive technology. An example that was noted by Toffler and then later confirmed by Tellis was there are incremental developments leading up to the disruptive technology, which can be seen by the horse drawn carriage to the modern electric car (Sood & Tellis, 2011; Toffler, 1970, 1991). Toffler (1970) also said that once a need was identified it would to lead to a disruptive technology. Tellis and Sood (2005) go into great detail on patterns they discovered, the first of which is that before the rise of a disruptive technology there are several smaller ones leading up to it. This means that competing technologies will coexist, and it is not unusual if older technologies continue to survive after the disruptive technology is introduced, although the authors note that these older technologies end up forming a niche market, citing impact printers compared to inkjet printers as an example.

The second indication of a disruptive technology is that disruptive technologies tend to not develop smoothly over time after introduction, but rather have more of an S-curve to it, indicating that development is erratic at best (Foster, 1986; Tellis, 2006). The next pattern was disruptive technologies are never disruptive by themselves, meaning that there is a dynamic between the assumed disruptive technology and the new secondary dimensions of performance
(Sood & Tellis, 2005). It is not unusual that when a technology is introduced there are other technologies introduced in combination with it, and this is more prevalent with disruptive technologies. Tellis and Sood (2011) use display monitors as an example, explaining that plasma displays were a disruptive technology, but as a companion LCD screens were created to lower the power consumption (Sood & Tellis, 2011). The last note the authors argue is not truly a pattern, but rather a general observation, which is often there are multiple disruptions occurring at once, particularly in technological performance (Sood & Tellis, 2005, 2011; Tellis, 2006). This will occur when a technology disruption occurs but is not truly disruptive and therefore not permanent, which means the new technology will surpass it gaining technological leadership, particularly when it is disruptive.

Whereas Tellis, Sood, and Toffler attempted to predict what might be a disruptive technology, Walsh argues that while there might be an indicator of what could be a disruptive innovation, it is predominately speculation and not worth spending efforts on attempting to predict one (Walsh, 2004). In Walsh’s 2004 article he discusses the importance of road mapping a disruptive technology. He points out that time is better spent on road mapping the disruptive technology after it has occurred, which leads to understanding the general trends of technology and what historical strategies have been successful in adapting to disruptive technology. Walsh agrees with Toffler’s idea that the only way to predict disruptive technology is through need, i.e. what is the functionality of the disruptive technology and how will it benefit a specific industry (Toffler, 1980; Walsh, 2004). Walsh also uses this as a way to road map the effects of disruptive technology stating that the only way for a technology to be disruptive is if it is functional, and assists the industry in a meaningful manner. Two other factors which he road mapped for a disruptive technology were that the technology needed to have a direct application, and that it needed to incorporate a strategy in its design (Walsh, 2004). For example, when smart phones were introduced they were a disruptive technology, replacing standard phones, and PDAs, but they were not simply a technological device, but rather a strategy to simplify the array of tasks accomplished by cell phones, PDAs, notebooks, calendars, etc. To summarize the technology may be disruptive, but without a strategy it will not have a massive effect. One understanding that Walsh, and Tellis, agree upon is that while a technology may be disruptive to one sector it is not necessarily to another (Tellis, 2006; Walsh, 2004). An example Tellis cited is in the lighting sector, where incandescent light bulbs are still the most popular, and LEDs have not disrupted it, whereas LEDs have been classified as disrupted for screen makers e.g. computer and TVs.
One of the more common questions which arises when discussing disruptive technologies is, ‘Are technologies inherently disruptive or is it the perceptions of the companies affected by them?’ There is merit in the idea that the technology is classified as disruptive not by the companies, but rather the industry as a whole, and it was pointed out earlier that technologies can be disruptive in one industry and not in another. Authors from Toffler and Christensen to Tellis, Sood, and Golder have asked this, without much of a solution. The most current possible solution lies in a study done in 2014 by Dedehayir, Nokelainen, Mäkinen, where by researching complex product systems they determined that disruptive technologies have to be inherently disruptive because they affect all areas of the organization, from leadership to logistics and so on (Dedehayir, Nokelainen, & Mäkinen, 2014). While technologies can be disruptive for one industry and not another, this study states the technology must affect an industry as a whole, and not simply individual companies (Dedehayir et al., 2014). Also, it is important to consider the original definition by Christensen, which explicitly says the technology must “improve in performance until it meets the standards of performance demanded by the mainstream market” indicating that it cannot simply be a company’s perception of a technology being disruptive (Christensen & Overdorf, 2000; Tellis, 2006).

The general understanding on this topic is that technological development is hard to predict, and whether or not the developed technology will be disruptive is even more trying (Christensen, C. M., & Raynor, 2003; Danneels, 2012). Since technological development is difficult to predict there is increased research in understanding early adapters of disruptive technologies, attempting to determine if it was simply happenstance or not (Tellis, 2006). Early adaptors of these disruptive technologies no doubt have an edge above their competitors, the question ends up: ‘were these organizations predicting that the technology was going to be disruptive, or was it another reason?’ This question is often asked to determine if the there is a predictable path a disruptive technology will take before being classified as a disruptive technology (Chrisman et al., 2005; Christensen & Bower, 1996; Christensen & Overdorf, 2000); if this were the case then it would be practical for all organizations to become early adaptors. However, as both Danneels and Tellis point out it is far more difficult to use a basic standard in order to predict whether or not an innovation will become disruptive, and it often is firm dependent (Danneels, 2004; Sood & Tellis, 2011). Tellis (2006) goes on to argue that not only is it firm dependent, but it is affect by the leadership within the organization, and family businesses generally end up being able to predict disruptive technologies earlier, due to visionary leadership.
2.2.2 Family Business

Perhaps one of the most widely research and extensively disagreed upon terms is the topic of family business, making it an ever evolving research study. The reason for this is that family businesses are unique entities, which vary among each individual firm, because of this it is difficult to settle on a consensus. However, generalizations can be made, such as family firms tend to emphasize the businesses as a whole over an individual, the culture is clearer, and the definition of success is not solely based on economic principles (Benavides-Velasco et al., 2013; Donnelley, 1988; PwC, 2016). There are assumed common issues within Family Businesses, such as nepotism, lack of enthusiasm in new generation, succession etc. However, arguments can be made that the stereotypical narrative of the family firm is evolving (Chrisman et al., 2005; Chua, Chrisman, & Sharma, 1999; Donnelley, 1988).

In a 2016 survey done by PwC one topic which family firms widely agreed upon as differing them from MNCs was that they all had “patience capital”. This is the idea that family firms can invest longer periods of time in an idea or concept, and allowing for the time needed to prove themselves (PwC, 2016). While non-family firms are often restricted because of stakeholder’s pressure, financial constraints etc. family firms have more freedom in regards to experimentation since they do not classify success simply by having the largest profit line. In a study done by Donnelly (1988), he identifies strengths family businesses have, and weaknesses including: conflicts of interest, poor profit discipline, and excessive nepotism. Donnelly offers possible solutions to these weaknesses, and emphasizes the importance of the family remembering that this is a business, requiring: profit discipline, good leadership, and reaching the target market (Chandler, 1990; Donnelley, 1988). The PwC survey endorses the strengths that Donnelly discovered in his research confirming that family businesses place higher value on reputation, tend to sacrifice more, are loyal, have better relationship with stakeholders, have better continuity, and understand their purpose (Donnelley, 1988; PwC, 2016). PwC (2016) reports family firms are better at recognizing successes on a firm and individual level, have a stronger understanding of the customer, and the finances of the business.

Research done by Chrisman, et.al. (2005) showed that there was a high connection of economic success among firms with higher family involvement. Understanding, these findings tends to be a bit difficult since previous research suggests that when a family becomes involved in an organization it increases costs because of things including family entrenchment, nepotism, members taking advantage, internal conflict etc. (Chrisman et al., 2005). However, this study
suggests that family involvement has more benefits, such as intangible resources, familial understanding, survivability capital, and lower agency costs which appears to be backed up by empirical research (Sharma & Manikutty, 2005; Sirmon, Arregle, Hitt, & Webb, 2008). Considering these opposing views in the research two conclusions can be drawn from this, one is that family involvement is important, and two, there is still work to be done on understanding the nuances of familial effects on a business (Chrisman et al., 2005).

Le Breton-Miller and Miller (2006) point out in their research and in a survey of other’s studies that it is not uncommon for family firms to out-compete public or government agencies. Family firms try to determine the long term goal approach, the governance, or something else which contributes to this unique factor that enables family organizations. The authors are quick to specify that family-controlled businesses (FCB) outperform non-family-controlled businesses specifically in returns on sales and assets, revenue growth, firm longevity, and market valuations. The authors review multiple studies on, FCBs, and non-FCBs, and they note there are multiple things that set apart the two types of business. In their research the authors specified six attributes that are unique to FCBs. A closer look at each of these attributes follows.

Long-term goals are not unique to FCBs, but the authors note that FCBs almost exclusively focus on long term goals, typically a period of five or more years, with little concern if the performance and costs suffer in the short term (Le Breton-Miller & Miller, 2006). The focus on long term goals allows for stewardship which reduces risk, builds up resources, and an emphasis on achieving enduring quality. These goals are applied to all FCB aspects.

Another unique attribute of FCBs according to Le Breton-Miller and Miller (2006) is longer CEO tenures, while non-FCBs can stay on for many years FCBs CEOs tend to stay on three to five time longer, for example Cargill, or Mars (Pearl & Kristie, 2015). The reason why CEOs stay on longer at FCBs is because of the power, status, and trust that is often give to the leader; and there generally is more investment and incentives to stay.

The third attribute, concern for subsequent generations, ties in nicely with the previous one, since it is important for CEOs of FCBs to prepare the upcoming generation for success in the business. According to Le Breton-Miller and Miller (2006) non-FCBs can have an interest in the subsequent generations, but generally that applies solely to the company and not the individuals. The Mass Mutual/Raymond Institute Survey on Family Business done in 2003 showed that leaders and owners within a FCB aim to maintain control of the company in the
family, in order to keep the same values, and reputation of the firm alive. This ties in again with the long term goals FCBs have since there is a desire to leave the business in the best condition possible for as long as possible.

The next point was on discretion allowed by family owners and CEOs to make decisions that are not driven by shareholders. This once again allows them to invest in long term goals that include investing in people and their education. Simply put, they have fewer constraints because they answer to themselves.

Point five discusses agency costs, which a type of internal costs that come from, an external agent acting on behalf of a principal that causes costs because of fundamental problems (Le Breton-Miller & Miller, 2006). The authors note that family businesses have little to no agency costs because they do not have shareholders. Or the few they do have are also invested in the family’s principles. This means FCBs have additional resources allowing them to invest more in the long run.

The final attribute unique to FCBs according to Le Breton-Miller and Miller’s (2006) is family control with little ownership, which means that ownership is not equivalent to control. Generally, FCBs are not owned by a single individual of the family, but spread out across the family unit, this guarantees higher personal investment, and higher involvement. When there is less investment by a business member there is less chance of interest in long term goals, which is one of the most unique aspects of a FCB. Ultimately, for FCBs it comes down to adhering to the mission, investing in the long term, building relationships, and keeping the family values at the core of the business.

2.2.2 Theoretical Perspectives on Adaptation to Disruptive Technologies

2.2.2.1 Strategic Adaptation to Disruptive Technologies

The approach a company takes to adapt to a disruptive technology will depend upon at what point they acknowledge the disruptive technology. Visionary leadership is a strategy that comes up quite often when determining how a company should respond to disruptive innovations. The definition used in this study is, “...the envisioning of ‘an image of a desired future organizational state, which when effectively articulated and communicated to followers serves to empower those followers so that they can enact the vision...’” (Westley & Mintzberg, 1989). Tellis (2006) makes the point that if a leader within a firm utilizes the theory of visionary leadership, then they will inevitably identify disruptive technologies, as well as have the
organization adapt to useful ones. Tellis (2006) discusses visionary leadership as a strategic reaction to disruptive technologies, believing it takes a visionary leader to understand the benefits of a disruptive technology, which could have the ability to move the company forward in the right way. The examples cited by the author include relentless innovating companies such as Proctor & Gamble, and Intel, whom have produced disruptive technologies. The author notes that one problem with this strategy is the condition of hindsight bias (Tellis, 2006).

Parker & Castleman (2009) study how small businesses adapt to rapid changes in their industry. In these situations they note that some family businesses employ crisis management strategies, while others attempt rapid integration with no plan, and yet others choose to ignore the disruptive technology entirely (Parker & Castleman, 2009). The authors studied how businesses move from being a traditional brick and mortar store to embracing all aspects of the e-business model. The article postulates that ebusiness was a disruptive innovation that impacted family businesses more than any other enterprise, and also points out that family businesses were able to adapt and grow after the introduction of ebusiness (Parker & Castleman, 2009). There are five theories the authors highlight as common strategies to adapt to disruptive technologies: resource-based view of the firm (RBT), Porter’s models (generic strategies), Theory of Planned Behavior, Technology Acceptance Model, and Rogers’ Diffusion of Innovation theory. The theories discussed in the Parker & Castleman (2009) article were confirmed in a 2012 article by Mladenow, Fuchs, Dohmen, & Strauss.

Both articles discuss RBT as a way to adapt to the disruptive technology. Parker & Castleman (2009) argue that RBT uses what the business has to adapt to the disruptive technology and thereby gain a sustainable competitive advantage; whereas Mladenow et. al. (2012) use RBT as a strategy for using disruptive technology to gain value after the firm has adopted it. Parker & Castleman (2009), noted that RBT highlights the abilities that the firm possesses, which means the disruptive technology, can be adapted to the existing capabilities. However, Parker & Castleman’s view of RBT assumes the business is already using its resources to the best of their abilities (Parker & Castleman, 2009). Still it has proven to be a rather common strategic approach to disruptive technologies, although perhaps not the most effective (Parker & Castleman, 2009; Ray & Ray, 2006). Mladenow et. al. (2012) stated RBT should be applied after the firm has already adapted to the disruptive technology, and the theory would identify value which has now been created in the business. Specifically value within: efficiency, complementariness, lock-in on cost, and novelty, and if these have not been added to the business then the disruptive technology has not added value to the firm from a RBT.
viewpoint. The issues with this approach is the business blindly adapts/adopts a disruptive technology to see if it adds value to the business, with little research beforehand, which often causes issues within the firm (Mladenow, Fuchs, Dohmen, & Strauss, 2012).

The second most noted strategy was something Parker & Castleman (2009) classified as a generic strategy, using Porter’s industry forces, and value change as a strategic response to disruptive technologies (Porter, 2001). These strategies range from niche marketing to differentiation, all of which require study of both the company’s strengths and weaknesses, as well as the disruptive technology’s. The authors note that this strategy is particularly appropriate when responding to disruptive technologies such as Web 2.0, and eBusiness, (Mladenow et al., 2012; Parker & Castleman, 2009; Ray & Ray, 2006). Mladenow et. al. (2012) also used Porter’s value chain strategy towards disruptive technology, but combined it with Schumpeterian innovation theory, as well as RBT, stating that it all fell under RBT (Parker & Castleman, 2009; Porter, 2001). The reason for this is that there is more customization for each firm to adapt to the disruptive technology; since there are no hard and fast rules with the “generic strategy” there is greater flexibility, allowing the business to evaluate its abilities and the disruptive technologies capabilities prior to an adaption. Generally, companies who use this do not fully integrate the disruptive technology, but rather adopt only the aspect which will be useful to its business (Parker & Castleman, 2009). The issue with using this strategy towards disruptive technology is it takes considerable periods of time before any action is taken. Moreover, the strategy looks at the firm, and the disruptive technology but not the external factors, which can leave small businesses with a blind spot (Parker & Castleman, 2009).

The authors chose to combine both the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB). Parker & Castleman (2009) identifies TAM and TPB as more individualistic strategies, which are used to predict behavior, having to do with the perception of the decision makers. This means that if a company is going to adapt to a disruptive technology, it is up to a small group or individuals opinion rather than evaluating the abilities and capabilities of the company and the disruptive technology. The authors do note that there is research done before a decision is made but not on the same scale as other strategies (Parker & Castleman, 2009). This can be beneficial for a company because depending on the disruptive technology they can have first mover advantage, and gain a competitive advantage by adapting early and learning quickly. It is important to note that TAM relays solely on the ability of the individuals making the decision, whereas TPB looks at external values - attitude, subjective norms and perceived control – together before making a decision on whether or not to adapt.
However, both of the strategies ignore the relationships and idiosyncrasies needed in the decision making process, particularly in a small business, in order to have the business accept and work with the disruptive technology (Grandon & Pearson, 2004).

The final theory used as a strategic response to disruptive technologies has become more popular lately, and is now considered one of the best strategies towards disruptive technologies, and that is Rogers’ Diffusion of Innovation theory (DOI). This theory looks to combine several aspects of the pervious strategies, trying to explain relationship and rational aspect of adapting to disruptive technologies. Rogers (1995, 2003), outlined four elements for this strategy: innovation, social system, communication channels, and time (Rogers, 1995). Parker & Castleman (2009) note that Roger’s theory of DOI has more to do with technology clusters rather than disruptive innovations or technologies, because of the multiple applications to which the theory can be strategically applied. The authors also noted how applicable DOI is effective in the context of eBusiness; additionally there are several characteristics of DOI such as, compatibility, complexity, relative advantage, and observability, which not only apply to the narrow field of disruptive technologies, but the broader one of disruptive innovation (Dedehayir et al., 2014; Rogers, 1995). Applying DOI theory they found that the most effective way to use it is to incorporate all four elements achieving a successful understanding of the business, the disruptive technology, the market, and determination of how the firm should adapt. Another benefit is that it is not individualistic, requiring information from all aspects of the business in order to make an informed decision, which means more clarity, time to learn, and time prepare the employees. The biggest limitation of DOI is that it is quite complex, and difficult to implement as a strategy since there are so many aspects, and people involved. Rogers (1995), agree with this limitation, and makes the case that the more a firm uses the strategy the more they will understand it and speed up the process each time they use it. Parker & Castleman (2009) also add that, it works better and is more effective in smaller business than larger ones.
<table>
<thead>
<tr>
<th>Author</th>
<th>Theory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tellis, 2006</td>
<td>Visionary Leader</td>
<td>Takes a visionary leader to understand the benefits of a disruptive technology, which could have the ability to move the company forward in the right way. Leaders cast a vision of their planned future that empowers followers so that they can enact the vision. Theory may suffer from hindsight bias.</td>
</tr>
<tr>
<td>Parker &amp; Castleman, 2009</td>
<td>Crisis Management</td>
<td>All of these leave the firm with no plan or vision, must react to external forces. None are recommended!</td>
</tr>
<tr>
<td>Parker &amp; Castleman, 2009</td>
<td>Rapid Integration with No Plan</td>
<td>Highlights the abilities that the firm possesses, recognizing tangible and intangible resources, decides which parts of the disruptive technology can be adapted to the existing capabilities. Assumes the business is already using its resources to the best of their abilities. May cause firms to blindly adopt technologies to see if they add value, with little research.</td>
</tr>
<tr>
<td>Mladenow, Fuchs, Dohmen, &amp; Strauss, 2012</td>
<td>Resource-Based View Theory (RBT)</td>
<td>Particularly appropriate when responding to disruptive technologies. Greater flexibility, but requires more time and can result in late mover disadvantage.</td>
</tr>
<tr>
<td>Porter, 2001</td>
<td>Generic Strategy using Porter’s Industry Forces</td>
<td>Decisions are made by small group or even individuals, encourages first mover advantage, decisions are made with less information. “<em>Go with your gut</em>” approach.</td>
</tr>
<tr>
<td>Grandon &amp; Pearson, 2004</td>
<td>Technology Acceptance Model (TAM)</td>
<td></td>
</tr>
<tr>
<td>Rogers, 1995, 2003</td>
<td>Rogers’ Diffusion of Innovation Theory (DOI)</td>
<td>Most complex, can be applied to disruptive innovation as well as technologies, most effective in smaller businesses where all the facts can be gathered.</td>
</tr>
</tbody>
</table>

Table 1: Summary of Adaption to Disruptive Technology Strategies

2.2.2.2 Competitive Advantage Strategy Theories

In his seminal work “Competitive Strategy: Techniques for Analyzing Industries and Competitors” Michael Porter summarized three areas where any business can achieve a competitive advantage for a period of time: cost leadership, differentiation, and market focus. Porter’s thoughts on competitive advantages are summarized in the following table:
The Cost Leadership value proposition is explained as delivering an acceptable product for the lowest possible price. Differentiation is defined as delivering a unique product or outstanding quality product as the value proposition to the customer. Finally, a firm can approach their value proposition to the customer by using market focus or stratification, offering their product to select groups (Porter, 2001, 2008).

Porter states that it is the obligation of business to choose the right value proposition at the right time, however recent views contend that knowledge has added a new significant competitive advantage, especially with the widespread availability of information on the internet, changing the “right one at the right time” to a context of “right ones at all times” (Murray, 2000; Teece, Pisano, & Shuen, 1997).

In 2002 Porter, along with Kramer, added “The competitive advantage of corporate philanthropy” to his list contending that context focused philanthropy can improve the customer base, thereby improving the market and the fortunes of the business. The authors argue that the social and economic objectives of a firm are not competing with each other, but rather complementing one another (Porter & Kramer, 2002). They believe that corporate philanthropy gives a large competitive advantage to a firm in the eyes of the customer and competition.

More recently, a firm’s internal environment has been identified as a driver for competitive advantage; this view emphasizes the resources that firms have developed to compete in the environment. Resource-based view of strategy (RBV) was identified by both Furrer, Thomas and Goussevskaia, as well as Hoskisson, Hitt, Wan, and Yiu (Furrer, Thomas,
& Goussevskaia, 2008; Hoskisson, Hitt, Wan, & Yiu, 1999) and is similar to Resource-Based View Theory (RBT) by Parker & Castleman (2009) however the competitive advantage is derived by the suppliers the business has assembled (Furrer et al., 2008; Hoskisson et al., 1999).

In 1991 Grant argued that capabilities are the source of competitive advantage while resources are the source of capabilities in a business. In this definition capabilities include patents, education, processes, skills and trade secret procedures that a business has developed over time (Grant, 1991). He proposed that the unique capabilities a firm possess are its assets and what give a competitive advantage or edge to the business.

<table>
<thead>
<tr>
<th>Summary of Competitive Advantage Theories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Author</strong></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Porter, 1980</td>
</tr>
<tr>
<td>Porter, 1980</td>
</tr>
<tr>
<td>Porter, 1980</td>
</tr>
<tr>
<td>Porter &amp; Kramer, 2002</td>
</tr>
<tr>
<td>Murray 2000; Teece et al. 1997; Tiwana 2002</td>
</tr>
<tr>
<td>Furrer et al. 2008; Hoskisson et al., 1999</td>
</tr>
<tr>
<td>Grant, 1991</td>
</tr>
</tbody>
</table>

Table 2: Summary of Competitive Advantage Theories

2.2.2.3 Theoretical Impacts of Family Influence on the Business Strategies

Considering the immense research done on family business, with little consensus, it is not unexpected for there to be multiple views on the effect family influence plays on the strategies of the business. Families, naturally exert their influence on the company and Hollander and Elman (1988) point to the link between family and its business and the mutually influencing nature of the relationship, while Klein (2000) claims that family influence is exerted either through the ownership structure, corporate governance, or management. In all of the different relationships between the founding, or controlling, family and the business, there is a convergence between the ends and means (Hollander & Elman, 1988; Klein, 2000).

Schulzea, Lubatkinb, and Dino (2003) & Andreas Kallmuenzer (2015), bring up agency theory, and explain it as framework where the owners are principals and the managers are agents. The arrangement leads to an agency loss which is the extent returned to the owners, is
less than what it would be if the owners exercised direct control of the business. Of course owners may choose to employ agents if they feel they cannot manage the business themselves. But, as noted by Le-Breton Miller & Miller (2006) family businesses have low agency costs since they usually run their own business, and those costs rise when the business is in trouble (Kallmuenzer, 2015; Schulze, Lubatkin, & Dino, 2003). Consequently a strategy to use the agency theory contends that family businesses do not need agents and save working capital.

There is an argument to be made that altruism is what truly sets family business apart, and has the most influence in a family business strategy (Lubatkin, Schulze, Ling, & Dino, 2005; Schulze et al., 2003). However, altruism is a two-edged sword. Schulze et al. (2003) present an extensively referenced discussion of how altruism can cause and/or complicate problems in the family firm. Altruism problems arise when owner-managers, by attempting to help others (e.g., children), encourage free riding, hold-up, and shirking. On the other side when altruism, exhibiting itself in the form of stewardship (Davis, Donaldson, & Schoorman, 1997) is embraced, it can positively affect strategic decisions.

The Davis et. al. (1997) version of the Stewardship theory encompasses the positive meaning of altruism, meaning that the family owners have a selfless concern for others well-being, driving a self-disciplining management style within family businesses, a determination for success, and encourages owners to ensure the business is a long lasting legacy for generations to come. Eddleston, & Kellermanns (2007) further expound on the stewardship theory in family business in regards to influence within the firm contending that stewardship improves the individual’s relationship within the business as opposed to simple economic motivation. The authors explain stewardship theory in a behavioral perspective, seeing the family as a resource, that provides the positive influences of collectivism, trustworthiness, and motivation (Eddleston & Kellermanns, 2007).

Behavioral Agency theory, as describe by Kumeto (2015), looks into how the decision maker’s risk preference affect the goals and risk of the business. The author explains that behavioral agency theory explains the influence risk preference has on a business, through limiting the definition of risk, and assuming that that the principles are stable over lengthy periods of time. It explains behavioral agency theory as a model of reviewing risk taking where decisions are ‘reference dependent’ and the decision makers are ‘loss adverse’ (Kumeto, 2015).

Chirico & Salvato (2008) find that the level of knowledge integration depends on the internal communication and dynamics of the family. Their study shows that high social capital,
excellent internal communication, and a culture that promotes change, are key in enabling knowledge integration (Chirico & Salvato, 2008). Waldkirch (2015) ties the social capital theory in with social identity noting that family businesses are identified by the social capital of the owners of the firm. He notes the dimensions of family, business and ownership, and actions of all family members impact the business and the family; indicating that the ties are so close one will affect the other (Waldkirch, 2015). Thus, if the family values lacks the key value to allow internal development to occur, the corporate side of the business will not force that upon the organization (Chirico & Salvato, 2008; Waldkirch, 2015).

<table>
<thead>
<tr>
<th>Author</th>
<th>Theory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schulze, Lubatkin, &amp; Dino (2003) &amp; Andreas Kallmuenzer (2015)</td>
<td>Agency</td>
<td>Usually, due to family relationships there is little need for agents to run the business, this frees resources for other opportunities.</td>
</tr>
<tr>
<td>Lubatkin et al., 2005; Schulze et al., 2003</td>
<td>Altruism</td>
<td>Well intended but uncontrolled altruistic behavior between generations encourages free riding, hold-up, and shirking</td>
</tr>
<tr>
<td>Eddleston, &amp; Kellermanns (2007)</td>
<td>Stewardship</td>
<td>Self-disciplining management style that measures success with, and outside of, profits; with a goal of ensuring the business is long lasting and provides a legacy. Behavioral perspective, that views the family as a valuable resource; encourages collectivism, trustworthiness, &amp; motivation</td>
</tr>
<tr>
<td>Kumeto (2015)</td>
<td>Behavioral Agency</td>
<td>Strategic decisions are ‘loss adverse’ due to the Family’s desire to maintain a high social position in the business and society</td>
</tr>
<tr>
<td>Chirico &amp; Salvato (2008)</td>
<td>Knowledge Integration</td>
<td>Internal family dynamics, usually cross generational, encourage greater communication and knowledge sharing that leads to a market advantage</td>
</tr>
</tbody>
</table>

Table 3: Summary of Family Influence Strategies and Theories

2.3 Theories Applied in the Study

While the literature review for this study provides a broad understanding of many theoretical concepts, once the case studies are selected it becomes equally important to focus in on the specific theories to be used for in the study. The business owners interviewed naturally do not think in terms of business theory but focus on the realities of running their successful enterprises. Consequently, because of the way the interviewees elect to run their businesses many of the theories reviewed in the literature simply do not apply to the researched organizations. The table below summarizes the applicable theories used in this study for each of the research questions:
<table>
<thead>
<tr>
<th>Author</th>
<th>Theory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tellis, 2006</td>
<td>Visionary Leader</td>
<td>Takes a visionary leader to understand the benefits of a disruptive technology, which have the ability to move the company forward in the right way. Leaders cast a vision of their future that empowers followers so that they can enact the vision.</td>
</tr>
<tr>
<td>Parker &amp; Castleman, 2009</td>
<td>Generic Strategy using Porter’s Industry Forces</td>
<td>Particularly appropriate when responding to disruptive technologies. Greater flexibility, but requires more time and can result in late mover disadvantage.</td>
</tr>
<tr>
<td>Porter, 2001</td>
<td>Technology Acceptance Model (TAM)</td>
<td>Decisions are made by small group or individuals, encourages first mover advantage, decisions are made with less information. “Go with your gut”</td>
</tr>
<tr>
<td>Parker &amp; Castleman, 2009</td>
<td>Crisis Management</td>
<td>Leaves the firm with no plan or vision, must react to external forces.</td>
</tr>
<tr>
<td>Porter, 1980</td>
<td>Differentiation</td>
<td>Unique product or outstanding quality product as the value proposition</td>
</tr>
<tr>
<td>Porter, 1980</td>
<td>Market Focus</td>
<td>Offering a product to select groups.</td>
</tr>
<tr>
<td>Furrer et al. 2008; Hoskisson et al., 1999</td>
<td>Resource-based view (RBV)</td>
<td>The resources that firms have developed to compete in the environment</td>
</tr>
<tr>
<td>Eddlestone, &amp; Kellermanns (2007)</td>
<td>Stewardship</td>
<td>Self-disciplining management style that measures success with, and outside of, profits; with a goal of ensuring the business is long lasting and provides a legacy. Also has a behavioral perspective that views the family as a valuable resource; encourages collectivism, trustworthiness &amp; motivation.</td>
</tr>
<tr>
<td>Chirico &amp; Salvato (2008)</td>
<td>Knowledge Integration</td>
<td>Internal family dynamics, usually cross generational, encourage greater communication and knowledge sharing that leads to a market advantage</td>
</tr>
</tbody>
</table>

Table 4: Summary of Theories used in Study

Note that in the Adapting to Disruptive technology Theories Parker & Castleman, (2009) Mladenow, Fuchs, Dohmen, & Strauss (2012) Resource-Based View Theory (RBT) was not used by any of the cases because in each case the businesses conducted research prior to proceeding with any form of adoption. Likewise Roger’s Diffusion of Innovation Theory (1995, 2003) did not appear to be embraced by the businesses. Even though DOI is most effective in smaller business the cases bypassed this choice due to the complexity of the theory.
In the Competitive Advantage theories section none of the interviewees cited Porter’s theories on Cost Leadership or Corporate Philanthropy as ways they were or had maintained an advantage. The businesses also did not confess to any “unique capabilities” like patents or trade secrets as their competitive success. It is not known if this is because they were protecting their trade secrets of simply did not have any, most likely the former. In a similar vein none of the interviewed family businesses chose to reveal propitiatory information that would support Murray (2000), Teece et al. (1997) and Tiwana (2002) Knowledge theory of competitive advantage and it too had to be eliminated from consideration.

Finally, when considering Family Strategy theories, even though none of the family businesses interviewed had a corporate governance as required for publicly traded companies none of them cited their streamlined governance structure and the freedom from Agency as defined by Schulzea, Lubatkinb, & Dino (2003) & Andreas Kallmuenzer (2015) as a leadership advantage. This may be a case of not realizing the inherent advantage they possess as a small business rather than the absence of the theory as applied to their businesses. None of the businesses interviewed admitted to the destructive forces of Altruism as expounded by Lubatkin et al.(2005) or Schulze et al. (2003). However, circumstantial evidence to support the Altruism theory did not surface during the interviews so bypassing this theory seemed reasonable. Likewise the strategic decisions made by the family leadership of the businesses did not subscribe to Behavioral Agency motivations as described by Kumeto (2015), in fact “loss adverse” rationalization did not seem to be considered in these businesses. Serious consideration was afforded to the Chirico & Salvato (2008) Knowledge Integration theory and it was retained as a possible theory to be used as a family business strategy. However, even though all the Family Businesses were evaluated in consideration of their Knowledge Integration practices the cross generational element for communication and knowledge sharing was simply not present in these case studies; perhaps if one was to interview some of these businesses again when children reach an age where they can influence there might find different results.
Chapter Three: Methodology

In this chapter the selected research approach and design will be explained and motivated. The ethical and reliability considerations as well as methodological limitations will be brought up.

3.1 Methodological Approach

In research methodology there exist a number of different approaches to understanding phenomena. The particular methodological perspective depends on the purpose of the study, the nature of the research questions, and the author’s worldview. In order to capture the complete value of the business leaders’ insights, the approach selected needs to be broad enough to encompass the variety and uniqueness of the enterprises, their conditions, and practices.

3.1.1 Philosophical Stance: Interpretivism

There are two main traditions within ontology: positivism and interpretivism. In the quest to understand the nature of reality, the two schools of thought take different stances. While positivists believe people’s grasp is defined by their external reality, or the world around them (Carson, Gilmore, Perry, & Gronhaug, 2001), interpretivists believe reality is multiple, and understood through the perspective of the individual (Hudson & Ozanne, 1988). Utilizing more flexible methods of study, such as qualitative approaches, interpretivism aims to grasp the individual perception of reality, through human behavior (Neuman, 2002).

Seeking to understand the specific context of the phenomenon studied, interpretivism is highly appropriate for studying novel phenomena, and conveying the unique perceptions of individuals regarding it. In particular, both family business, and disruptive technology are topics that have been studied extensively, and the two’s convergence has to been explored. Attempting to provide insight into the strategic adaptions family businesses undergo requires the in-depth understanding of the motives behind such decisions. Thus, rather than trying to reach universal and uniform conclusions, this approach would aid the study in discovering the perceptions of the leaders, what influenced their decisions, and commitment.

Understanding social reality through the perspective of “cultural groups”, made up of groups of individuals who have a common national, ethnic, organizational, or other culture is crucial in making sense of the analyzed cases, and presenting results in a clear and comprehensive manner. Studies conducted by Turner (1987) and Yan and Zeng (1999) demonstrate the various ways in which different communities understand the particular phenomena, and their underlying causes (Yan & Zeng, 1999). As the goal of this study is to provide a comprehensive case analysis to private company leaders, and the focus is on Swedish
private businesses, interpretivism provides a unique opportunity to present, scrutinize, and summarize this study’s findings. Finally, in order to provide a roadmap for dealing with challenges brought about by disruptive technology, and improve future adaption, private enterprise decision makers should be given analysis and advice directly applicable to their reality. To do otherwise would be to hamstring and misdirect the usefulness of this study, and the body of knowledge, which enables it.

As this paper aims to extract the strategies to maintain competitiveness in the face of disruptive technology and their implementation, a positivistic approach would largely limit the impact of the study. Despite the relative gain in validity, it would hamper the author’s ability to draw conclusions from the case studies, and contribute to the body of research. Complete objectivity would entail perfect isolation from the author’s historicity; however, instead of providing a clear picture of the phenomenon, would provide no view at all (Francis, 1994).

3.1.2 Theoretical Approach: Inductive, Deductive, and Abductive Approaches

There are three different types of reasoning in academic work. They are: inductive, deductive, and abductive. Each of them has specific advantages and shortcomings, and thus, this study has to utilize the approach most appropriate to its goal.

One of the definitions of induction argues it is a rule or principle, later psychometrians defined it as generalizations drawn from particular set of observations (Sternberg & Gardner, 1983; Thurstone, 1938). While this understanding of inductive reasoning is generally accepted, other researchers claim that it is incomplete. Colberg, Nestor and Trattner (1985) instead amended the definition of induction as “a type of argument in which the conclusion follows from the premises only with a degree of probability.” (Colberg, Nester, & Trattner, 1985).

Thus, induction should be perceived as a method, which produces rules or strict theories. Rather it proposes reasonable generalizations derived from observations, which are only true to a certain degree. Samuel Shye (1988) argues that while inductive approaches produce useful generalizations, they should be evaluated in terms of their clarity and their scientific usefulness. He clarifies that instead of inducting that all observations are subordinate to the rule, suggests that if there were to be a future observation, it would most likely be in accordance with the rule.

Park & Allaby (2013) define deduction as “reasoning from the general to the particular, for example developing a hypothesis based on theory and then testing it from an examination of facts.” (Park & Allaby, 2013). This approach thus depends on a set of given premises, which
need to hold true in order for the theory to be true (Colberg et al., 1985). In the context of this work, this method would mandate a single stated hypothesis, or set of hypotheses, which are to be determined as true or false in the process of gathering and analyzing the primary information.

Family companies are vastly different from one another and carry a distinct set of values, and intricate traits determined by their founders and leadership (Habbershon & Williams, 1999). One could argue that this is less true of MNCs, which through their governance structure, divisional organization, and commitment to common principles of optimizing profits and increasing markets share, largely operate in a similar fashion. However, this is rarely the case for family businesses, which are often driven not simply by monetary pursuits, but also individual pursuits, which are highly unique (Denison, Lief, & Ward, 2004). Therefore, establishing a hypothesis, which would explain family businesses’ mechanism to cope with disruptive technology, and manage their positioning, is difficult, with some exceptions.

Abductive reasoning, as described by (Schvaneveldt & Cohen, 2010), is the conclusion, which best explains the current set of observations. Peirce (1958) argues that it is the evaluation of the logical norms that determine the creation of new hypotheses. Using this method, the researcher observes reality from his or her perspective, and uses logic to determine what the most probable explanation for the phenomenon will be (Peirce, 1958).

Despite its widespread use in practical academic research, particularly in qualitative studies, abductive reasoning has its limitations. While it allows for a much higher degree of flexibility, it is a less pure method of seeking truth. Instead, it is a more operational one, which often leaves room for the researcher’s own beliefs and biases to find expression.

However, in accordance with the nature of this study, the most appropriate method of analysis is taking an abductive approach. Taking up the classic understanding of abduction, and hence complementing it with the contributions of Colberg et al. (1985), Schvaneveldt & Cohen, 2010 and Park & Allaby (2013), would allow the author to research and understand the existing theory, then test it to see if they selected theories apply to the cases studied in this paper. Thus, the company cases can be analyzed and the conclusions can be reached on the basis of the primary data acquired through the interviews (Colberg et al., 1985; Park & Allaby, 2013). These conclusions can infer processes enacted by the companies have a predetermined effect (partly explained by the limited number of observations in this study), and also suggest future research, or potential theories which can be developed.
3.1.3 Research Method: Quantitative and Qualitative Methods

Quantitative studies make use of data collection and analysis methods based on quantification, or conversion of attitudes into ordinal or nominal values. In this type of study, the researcher maintains a degree of distance from the researched (Phelan, 2011; Yin, 2013). Quantitative methods are appropriate for studying larger segments of the population, as their adherence to numerical values limit the in-depth understanding of each participant (Fu, 2011). These methods are ideally suited for grasping an already familiar issue more fully.

Alternatively, qualitative approaches allow for much more flexibility on the side of the researcher. Allowing for exploration of the phenomena, which are understood through their meaning to individuals, i.e. their qualitative interpretation of the phenomena, and when the assignment of values is a difficult challenge to overcome (Denzin, N., & Lincoln, 2011; Padgett, 2008). Qualitative approaches offer a unique opportunity to obtain a detailed view of the participant’s attitude to the subject.

For the purpose of this study, a qualitative multi-case study approach is selected. The main focus of this method is to penetrate a topic through an exploring process rather than emphasizing on quantifiable variables within a topic. A qualitative research method is favored when studies of objects in normal context is pursued and when intention is to investigate a phenomenon in terms of the values people bring to them (Denzin, N., & Lincoln, 2011). Furthermore, qualitative studies are better equipped to relate the insider perspectives of participants (Padgett, 2008). Since the purpose of this study is to understand how family businesses adapt to disruptive technology a qualitative approach is the most appropriate choice. Alternatively, attempting to interpret the complicated relationships between decision-making, reaction to competing entities, and disruptive technology through quantitative analysis would fail to capture the complexity of the interactions, and largely exclude the human element.

3.2 Research Approach and Study Design: Case Study

To extract insightful information from the family business representatives (interviewees) a two-pronged approach is used: first, analyze the enterprise itself, its competitive position, the specific challenges presented by disruptive technology, the enterprise’s performance in coping with these challenges, and their outlook for their future performance in this category; and second, conduct interviews with the selected representatives,
i.e. top level managers to factor in their understanding of the situation, and their plans in adapting and overcoming the challenges at hand.

As previous research in the field (Charmaz, 2008; Webb & Shavelson, 2005) largely focuses on mass surveys, an in-depth understanding of the strategies family business use to adapt to radical changes in their business landscape will be useful. While analyzing the matter on a macro level, with data from a sample of companies, may be useful to gain general insight into this type of enterprise, it rarely ever penetrates to the level of individual challenges, competitive positioning, and decision making processes. Thus, further exploration is needed, which specifically focuses on the individual decision makers and business, revealing the strategies and methods they employed in adapting to disruptive technology.

(Yin, 2013, p.23) defines the case study research method as “an empirical enquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon are not clearly evident; and in which multiple sources of evidence are used.” This approach was the most relevant for this study, particularly due to its focus on the inherent novelty and ambiguity of disruptive technology. Therefore, the case study method was applied to three family businesses, thus securing several sources of evidence, and laying the foundation for detailed analysis and comprehensive understanding of the phenomenon.

3.2.1 Data Types: Primary Data and Secondary Data

There are two main types of information, which can be collected, identified, and utilized in academic studies. The first is primary data, denoting knowledge, which is extracted by the author as a result of their pursuit of this knowledge. Primary data encompasses interviews, survey results, nominal assessments of a given problem, and so on. In other words, primary data can be described as all information that is produced by the author. Thus, the goal of primary data is for it to be used as either the confirmation of rejection of a given hypothesis, and represents the author’s unique contribution to the academic world.

In contrast, secondary data represents the information used, which is not the production of the author. This information can be used to build a comprehensive body of knowledge to complement the collected primary data. This information affirmed by previous research and publications can serve as a solid base for better understanding the companies in their setting (The Royal Swedish Academy of Agriculture and Forestry, 2015), or grasping the impact of disruptive technology in the broader industrial context (PwC, 2016)
To make the best use of all information available, this study makes use of both primary and secondary data. This approach allows the author to build on the experience and findings of existing research, while contributing to that body of knowledge the authors observations and conclusions (Yin, 1981). The primary data in this paper was collected through interviews with representatives of the family businesses. The interview contains a set of open-ended questions in order to reveal the specific set of processes, unique to that business, which allowed them to cope with the emerging disruptive technology, and remain competitive. The interview guide was thus designed to provide the company representatives with enough freedom of expression, as well as encourage them to bring up similar situation in order to better understanding the coping capabilities of their businesses.

3.2.2 Case Selection and Data Collection

In order to gather information in line with the purpose of this paper, the companies selected to study needed to have been exposed to disruptive technology, and have experience in adjusting their competitive position accordingly. Given the drastic transformation, which has impacted manufacturing, agriculture, and the majority of professional services, these sectors were of specific interest to the author. Automation, digitalization, and the implementation of advanced robotics were all trends that impacted a number of different industries, and companies in the selected fields were likely subjects of study. This approach also meant the exclusion of family business, which were willing to co-operate with the author and provide insight, but had limited direct exposure to disruptive technology.

3.2.2.1 Case Selection

In this case, the number of cases is required to be broad enough to capture a variety of challenges and solutions (Yin, 2013). At the same time, the study needs to maintain its focus, thereby placing some limitations on the number of cases studied to be able to extract successful strategies, as well as methods that family business employ to cope with disruptive technology (Yin, 2013). The chosen number of cases also had to take into consideration the limitations of the market, geographical location, and availability of family businesses in industries, which have faced the challenges of disruptive technology and were available and willing to respond.

For this study the family businesses were selected by using Le-Breton Miller & Miller (2006) six attributes in addition to the family business definition by Ampenberger, M., et. al. (2013) as the criteria to determine if they were in fact a family business. By using this criteria, in combination with the previously defined geographical limitation, the family business
selection process was streamlined and the family businesses chosen fit the determinants needed for this study. In order to determine if the industry, and in turn the family business, had experienced a disruptive technology a combination of Christensen (2003) and Tellis (2006)’s definitions and criteria were used ensuring that the cases selected had in fact experienced a disruptive technology. Taking all the above criteria into consideration the three cases selected were: a financial firm who experienced digitalization, a dairy farm which experienced automatization, and a tree farm which experienced automatization in terms of heavy machinery.

3.2.2.2 Data collection: Interviews

The interview was built upon a number of set questions. The interview guide was partly influenced by previous research, but mainly focused on the theoretical framework. Following the academic studies of the individual enterprises, several patterns were isolated, within the selected companies, and used to tailor the questions. The goal of this approach was to build a solid theoretical foundation for the interview through the frame of reference, and then compliment that with the specific primary data, received through the case studies. Thus, enterprise representative would have more room to expand on the specific techniques they used to better position their company strategically, the internal discussions that took place, and the ultimate decision in handling the challenges. This approach will provide a more complete understanding of the issue, as it studies the phenomenon in its natural setting.

The interviews were conducted face-to-face with the author present, and one or, in some cases, two representatives of the family business. The interviewees were selected by the family business, and took into consideration the authors request. The representatives selected were CEOs for two of the cases and the Managing Director (MD) for the third. In order to ensure confidentiality of the meeting, and to safeguard that trade secrets are not revealed the interviews were conducted at the offices of the individual family firms. For the most part, the interviews followed a set structure, as defined by the interview guide, with some leeway for respondents to provide more detailed answers, and for the researchers to ask for clarifications. The conversations were recorded in audio format using a smartphone. Additionally, the author took physical notes, which served to supplement the audio data.

3.2.3 Data Analysis

In order to examine the data gathered during this study Yin’s (2002) explanation on analyzing qualitative data was used. The data analysis is based on the structure of the interviews going from the company to the interviewee, and then to the two research questions. In order to
provide complete responses to the question the interviewees direct answers were complimented by relevant information provided in other sections of the interview. Through this method of puzzling the answers together the author was able to provide accurate and extensive insight into the business leaders’ decisions as well as the motivations behind them. The results are presented in chapter Five, to answer the research questions which were proposed. Specific strategies, for disruptive technologies, competitive advantage, and family influence were presented as an evaluation of the effectiveness and the effect on the family business.

3.3 Research Validity and Reliability

All types of qualitative data analysis rely on the carefully analyzing the information, abductive thinking, and a search for deeper meaning (Yin, 2013). According to Yin (2002, 2013), qualitative research is not as generalizable as quantitative research in a purely scientific sense, due to its reliance on small samples and insufficient, ambiguous data. However, the findings derived from qualitative studies should be considered just as credible in terms of applicability, and driving further research. Thus, what defines the validity of the study is the objective setting of the research and establishing sensible parameters (Hamel, J., Dufour, S. and Fortin, 1993; Yin, 2013).

3.4 Ethics

Several ethical issues can arise in this study. In keeping with Yin’s (2013) guidelines on qualitative studies, interviews were conducted at the office or conference room at the business, while the interviewees were informed ahead of time how the interview was intended to proceed. This was done in order to respect the business as well as the interviewee. Also, to avoid ethical issues, particularly regarding the confidentiality of the interviewees, no video recording was involved (Yin, 2002, 2013). Additionally, the recorded files were only used for this study, and were not nor will be distributed to third parties. In accordance with keeping anonymity, as per two of the company’s request, the names of the firms and individuals were not revealed; this was done to quell the worries of the companies involved in protecting their trade secrets. This paper was written with the utmost objectivity at heart, and aims to avoid any bias. Lastly, this study’s sole purpose is to promote the advancement of the subjects studied, rather than that of any organization or individual involved.
Chapter Four: Data Presentation

This chapter presents the facts of the family businesses which were studied. It also gives a detailed background on the businesses as well as the individual representative interviewed. Finally answers given are outlined.

4.1 Case One

4.1.1 The Company

As per the request of the family business the company will not be named. They operate within the financial industry in Sweden and have their headquarters located in Småland. The family business was started in 1918, by a father, his wife and two sons, who saw a need within the community to help farmers in rural Sweden with accounting services. The firm grew rapidly and over the next forty years expanding into other regions in Sweden, as well as developing their services to including auditing, insurance, banking, consultancy, and other financial services. In the late nineties, the family business also began taking on sub-contracting work for the “Big Four Auditors” and other larger auditing firms, and added market analysis to its services. The family business prides itself on personal relationships with the customer, establishing long term relationships, which often transcend generations. The business has over 150 employees throughout Sweden, and is still operated, and owned by the family, with the sixth generation now leading it.

The industry of financial services is a rather wide area; this particular family business believed that their other competitors could easily be any one else operating within the industry, but specifically point to larger companies such as PwC and KPMG as a threat. In order to curb the potential threat of being put of out of business by the larger firms they made the decision to work with them through local contracting work, ensuring the business would stay true to its family roots, while adapting in order to remain competitive in the finance industry. They still acknowledge that other professional services firms within finance are competitors, but believe that they are doing what they can to remain ahead of others in the industry.

4.1.2 The Interviewee

The individual interviewed for the financial firm is the current managing director of the company, who is also one of the owners, and the sixth generation of his family to manage the business. He started in the business while he was at university, interning in one of the regional offices over the summer, and after graduating becoming the manager of one office on the west coast of Sweden. He worked there for several years, implementing new processes which
streamlined information, and cut individual employees workload, afterwards he became a
director of one of the regions and oversaw the integration of computers into daily operations.
In 2008, he was promoted to managing director of the business, with his father having the CEO
position. As managing director his daily tasks include overseeing all aspects of the operation,
ensuring the offices are operating smoothly, adhering to a budget, negotiating contracts, and
making sure the company is staying true to the family values. His mother heads the human
resources department, while his sister is assistant director of marketing, and his brother is part
of the legal team for the business. He also noted that there are several other family members
who work throughout the family business from receptionist to account managers. Historically,
the business has always employed family members, but requires them to start in the lower levels
of the organization, before moving up, which is seen as an excellent practice (Jaff & Flanagan,
2012). The idea was to ensure they understood all aspects of the business, and that they show
the family values, which were also applied to the business.

4.1.3 The Interview

4.1.3.1 Research Question One

In their desire to remain competitive, the financial firm interviewed decided not to
merely respond to a disruptive technology, but adopt it early in the hopes of leveraging it into
an advantage. While there was little to no outside pressure at the time, the leaders of the
company took the step to digitalize their business in the early 1990s. The adoption aimed to
streamline operations and stay ahead of its competition. The new systems allowed the company
to automate a significant amount of its workload, and eased the load on employees.

Driven by their commitment to excellent customer service, the decision to transform
their business through digitalization was swift and firm. The plan was hatched within the family
executive management, and after understanding the opportunities this internal change held,
leadership did not waste time in making the leap. The interests and concerns of employees, as
well as the managers of the various departments were taken into account, yet they did not delay
the process. Since the family leaders take their employees worries seriously, not only out of
care, but also as insurance to keep the business moving forward, it was necessary that
communication and transparency was ongoing during the process. This provides a good
example of being receptive to feedback while remaining committed to the business decision.

This process took time to implement and subsequently affected all areas of the business.
As this was a break from common practice, the staff was largely unfamiliar with the new
technology, and how to operate it efficiently. This provided a wonderful opportunity for the team to come together, and develop stronger interpersonal relationships through open interaction and co-operation. Following the business transformation, not only was there an improvement in the quality of internal communication; this also brought a rise in efficiency.

4.1.3.2 Research Question Two

An important point is that while the firm did adopt a digital approach earlier than its competitors, it remained loyal to its previous business practices that had made it successful. The company’s strength lays in its attention to detail, and commitment to excellent customer service. They pride themselves on spending more time with customers than their competitors, and boast a superior understanding of their concerns. These are the business principles they only strengthened through the new technological adoptions. In contrast, some of their competition, which did digitalize their service, lost their “human touch”, and conceded their competitive standing in the market.

The reason provided for the transformation was the firm’s sticking to its mission in its desire to provide superior customer service. While there were signs of digitalization taking over their industry at the time, the old ways of doing business were still considered good enough. The leadership core, was determined that the switch from analog to digital information systems was inevitable, and saw the opportunity to get the upper hand on their competition by early adoption. Additionally, they spent the time necessary to get their staff on board with the change, hearing out the worries while emphasizing the importance and prosperity of the change. Their determination paid off, leading to the company’s quick ascension within the local market, and rapid growth followed. As more and more clients were lining up for their services the business soon found itself among the most elite in its industry in the entire country.

While the business leaders assessed the transformation to have been a tremendous success, they do admit that there were several aspects, which could have been handled in a more efficient manner. Learning from their experience with disruptive technology, the firm wants to leverage novel and better business processes, as they are aware of the opportunities and growth they can bring. Currently, the company has dedicated a small team looking out for disruptive technology. However, they insist an in-depth analysis and competitive evaluation is essential in picking out the market-changing technologies from passing trends. Concluding, they stressed the importance of undertaking such drastic business transformation when the benefits would be significant, and in line with the company’s values and goals, rather than for the sake of change.
4.2 Case Two

4.2.1 The Company

Glömsjö Gård is a farm, which has its headquarters located in Landsbro, Sweden and operates within southern Sweden. The business has been in operation since 1950, now for three generations, Magnus Svensson, is currently leading the firm as CEO. The business started as a dairy and pig farm, having cattle, pigs, and horses, with the family firm selling milk and pork to the locate businesses, operating in a business to business environment. The current CEO worked on the farm while growing up, having held a management position, and took over all operations in 2001. Magnus Svensson has been leading the farm in a bit of a different direction due to a destructive fire on the farm in 2005, which killed all the pigs. After the tragedy the decision was made to focus the farm milk production only (Jönköping, 2005). Since then the family business has increased their milk production and now sells the milk exclusively to Arla. The farm currently has 350 cattle, and five to eight employees working depending on the season, with five on staff at all times.

Due to the contract Glömsjö Gård has with Arla they do not, currently think they have any other direct competitors. The farm is aware that other milk producers could potentially triple or quadruple their production of milk, but due to the high demand for milk they do not see this as a threat. Additionally, the business does their best to focus on producing the best, most ethically produced milk, without bacteria, or pesticides, in order to maintain their contract with Arla. It was also pointed out that when it comes to getting a contract with a company like Arla or any other food selling business the regulations and standards are quite high, and difficult for new entries to the industry to meet; often taking years to build up to the required standard.

4.2.2 The Interviewee

The person interviewed for the dairy farm was the chief operating officer and owner Magnus Svensson. He took over the company from his father and uncle in 2001 after working in the business for ten years as a general manager. He has overseen the largest growth in the business since it first began in 1950, and has overseen the biggest operational changes since the business was started. When he first took over the firm in 2001 the farm had a total of eighty animals, and now the farm has 350, and roughly eight employees, requiring him to manage both animals and people in an efficient manner. Magnus’ daily task include follow up with his managers, overseeing operations, reviewing market trends, and ensuring everything is up to date.
4.2.3 The Interview

4.2.3.1 Research Question One

Gömsjö Gård, was faced with the challenge of automatization. The leaders of the dairy farm found their industry was being taken over by “robots”. The robot is a two part system, one the machine which actually milks the cows while it checks the health of the milk, and part two - a necklace the cows wear which sends information back to the main computer on the animals’ health. Rather than having their cows milked by hand, the firm had already adopted a form of automated milking machinery in 2005. However, the new and improved robotic system provided more than just efficient production. The novel technology also allowed the animals to go and get milked at the time of their choosing. With minor training, the cows were able to spend much more time outdoors, grazing and enjoying the fresh air, free from the coercion of preexisting techniques.

Glömsjö was slow to adopt this technology. However, when seeing more and more of their competition picking up on this technology, they gradually realized that this was a change that threatened their survival, but also provided opportunities for business development. Despite their initial worries that they were lagging behind their rivals, the family committed to adopting the disruptive technology following internal discussion with personnel. After the CEO signed off on the decision, integration was smooth. Both livestock and employees were able to adapt to the new conditions without much difficulty. Having some experience from the integration of the previous generation of milking machines played a critical role. In 2005, the company had taken six to eight months to implement the new robot technology. During this second transition, overall production levels did not drop as with the previous technological adoption. Instead, they rose, and continued to rise after the process was completed.

4.2.3.2 Research Question Two

While not superior in technical efficiency, the newly installed robots were revolutionary from an ethical standpoint as it provided better monitoring of the health of the cows. The new technology also included relaying valuable data directly to mobile devices connected wirelessly to the system. This resulted in increased production and allowed the introduction of a larger number of farm animals. The number of cows grew from 80 to 350, more than quadrupling the headcount on the farm. The family also acquired more pastures to accommodate the cows’ extended degree of freedom. Significantly, the farm did not need additional staff. The integrated
robots took up a significant amount of the workload for the nearly quadrupled increase in livestock; even making the staff’s work lighter.

When the disruptive technology struck the market and started making an impact, the family became aware of its potential. However, the older family members were reluctant to adopting the change early on. This resulted in the farm losing its competitive standing, and feeling more pressure to adopt. The inability to assess the viability of the threat and indecisiveness in the early stages of the challenge cost the company both in terms of confidence and market share. In contrast, the dedication to undertaking and completing the adoption was key to regaining their prominent place among competition, and restored stability.

4.3 Case Three

4.3.1 The Company

As per the request of the family business interviewed, the name will not be revealed. The third family business studied operates within the forestry industry and is located in southern Sweden. The case involves two separate family companies founded years ago, which were combined into a single company about ten years ago and still operates as family business, but with two families. The first family company was founded by a family in the 1870s as a working farm having everything from wheat fields to animals. It continued to operate as such until the 1920s when it purchased more land and added tree farming, and by the late 1940s the family decided to focus solely on tree farming, while keeping any animals, wheat, and vegetables only for family consumption. By the 1980s all other aspects of the farm had been phased out and the focus was only on tree farming.

The other family business was started in the 1920s as a dairy and tree farm, and is currently operated by the third generation with the fourth generation learning the ropes and planning to take over in the next few years. The farm switched to beef cattle in the 1980s seeing a need in the area for a good beef production, and also kept the tree farming as a steady source of income. By the late 90s early 2000s the farm was growing its tree production, gaining quite a bit of land in the area, and after meeting with the family from the first farm they made the decision to merge the tree farms together into one successful business. While both families maintained control over their land and kept other aspects of the farm (such as the beef cattle), they made the decision to pool resources such as equipment, finances, ideas, and employees. After the merger the two families each picked a ‘leader’ who would co-lead the farms and
together be the final decision makers on where to take the farms. Furthermore, the farms went from each having an average of ten employees to collectively having an average of twenty to thirty employees depending on the season. In addition to the two family leaders both families have several members working in the business from bookkeeping to daily operations.

4.3.2 The Interviewee

The interview was done with the two leaders of each family, who explained their position as “co-CEOs” and “co-MDs” and “the people who have final say on everything, sometimes”. The first interviewee represents the family and farm which was started 1870s, he began working for his father on the farm when he was a small child help out here and there, and worked more as he got older. He later became a manager in his late twenties, after he finished university, with eight people reporting to him for an area of eighty hectares away from the main farm. When his father became ill he began managing the farm taking over all operations before he turned forty. The second leader from the other farm had a similar story, being involved in farm decisions from a young age, as well as learning how to take care of a calf after the mother had died, when he was twelve. He started working on the farm regularly while in high school afterwards he pursued a university degree in agriculture and management, returning to the farm to work alongside his father while his brother left for studies. After a year he went to work for a private company in central Sweden for twenty years, returning to the farm with his brother after both of their parents passed away quite suddenly. According to the co-CEOs, the merger occurred at a good time, both were doing well on their own, but ended up better together, desiring more stability and a future for their families. The co-CEOs had known each other for years, attending the same schools, and determined the farms would work well together.

4.3.3 The Interview
4.3.3.1 Research Question One

The company has faced a wide array of disruptive technological challenges over its many years of operation. Recently, they have adopted the use of modern tree harvesters. While the firm was already using a less sophisticated form of harvester, the difference in efficiency and the benefits of increased production made it clear to management that there was a lot to be gained from this new technology.

At that point, the business leaders were searching for a better method of cutting trees, and understood the limitations of their current harvesters. However, initially there was no
uniformity in the decision to adopt the disruptive technology. There was internal resistance from one of the co-managing directors, which led to a delay. As described by himself and his partner in the interview, they are typically cautious in their process of evaluating the pros and cons of drastic changes to their business. They needed to have the confidence that the novel technology would be widely adopted in the industry, and would be truly useful, to guarantee stability both in their financial books, and in their homes. Thus, the company acquired the harvesters at about the same time its competitors did.

Despite the initial uncertainty, the delay did not impact the business negatively. The modern harvesters allowed them to dramatically increase production, and maintain a relatively small staff. The adoption proved to be a learning process – for employees and management—and brought a lot of enthusiasm to daily work. The new machines were also integrated with forestry forwarders, which transported the trees from the forest. The majority of their competitors, who did not implement the technology, were forced to shut down. Their antiquated method of operation was no longer competitive, and their production could not compete with the widely-adopted new harvesters.

4.3.3.2 Research Question Two

The company perceives its executive expediency as a significant advantage over its competitors. The managing directors actively keep track of novel advances in the forestry and related industries, and are confident in their ability to transform the business efficiently. Given the large size of the farm, financial performance is a strong motivator. As mentioned earlier, the evaluation of a potential transformation has to be carefully weighed to determine its impact. However, once the assessment is complete, they act with unwavering determination, and in close collaboration with their tight-knit employee community.

The managing partners emphasize the importance of clear and timely communication in reaching decisions. As described, the company is the result of a merge of two separate family companies, and it is key to respect the interests of the families. As both of the MD’s were raised in the responsible leadership style, they adhere to the timeless business principles they inherited. Their participation in the discussions regarding the decisions not only ensured a smooth transition to their generation, but also taught them the fundamentals of management. They hope to convey their own knowledge along with a keen sense of humility to their own children, groomed as the next generation of business leaders.
Chapter Five: Analysis

This chapter is a review and comparison on the three case companies. It looks at the three factors in this study: adaption to disruptive technologies, maintaining a competitive advantage, and family influence. The chapter also ties in the primary data collected during the interviews with the initial data gathered during the research.

5.1 Adapting to Disruptive Technologies

5.1.1 Case One

In the case of the first family business studied, the financial firm, they experienced the disruptive technology of digitalization. Instead of being wary at the prospect of such a radical disruptive technology the leaders of the family business, particularly the CEO, saw benefits in it, and embraced the disruptive technology head on. The firm was an early adaptor (first in its region) of digitalization, and continued to adapt to as new waves of digitalization technology emerged over the years. The strategic decision by the leaders of the family business to adapt fully to digitalization, was an action that is explained by Tellis (2006) in the Visionary Leadership theory. The leadership in Case One was convinced that the technology would revolutionize the industry, and saw the business value that their employees could not see, employees who worried about adapting to the unfamiliar systems in the short term. Tellis noted that visionary leadership, requires a leader who understands the benefits, potential opportunities, and has the ability to move the organization forward (Tellis, 2006). The leadership team in Case One exhibited these attributes by identifying digitalization as a beneficial disruptive technology, prior to the rest of the industry, and adapting their organization to utilize digitalization the fullest potential of the technology and their employees skill/understanding. Furthermore, the MD and CEO continue to make sure the family business is up to date with new technologies, which they perceive to be the most beneficial for the firm, employees, customers, and family. Case One utilized visionary leadership as their strategy to adapt to the disruptive technology of digitalization, with management understanding the benefits of the disruptive technology, and applying them to the business in the most effective.

5.1.2 Case Two

The second case studied, the dairy farm, which experienced automatization, through milking robots. The farm was a late adaptor to the disruptive technology, since the robots were already mainstream in the industry by the mid-2000s, and the CEO saw that he needed to adapt in order to remain strong within the industry. Therefore, since it was a late adaption, with research and understanding about the business, they used a generic strategy (Porter, 2001), which is particularly useful when a business is in a more reactionary stage, as defined by (Parker
Parker and Castleman (2009) state that this strategy requires knowledge of the company’s strengths and weaknesses and the disruptive technology. Case Two did this, researching and waiting to see how the disruptive technology affected other dairy farms, and thought about how it could help their own family business. Mladenow et. al. (2012) noted that this strategy was the most customization for each business, allowing for them to take what would be most helpful, evaluating the assets of the disruptive technology and the business. This is seen in Case Two with the leaders choosing to slowly integrate the robots over time, not switching everything over at once but using the multiple milking set simultaneously with the new robots. Case Two was a late adapter, and adapted a bit more as a reaction to keep up to date within the industry. Both Parker and Castleman (2009) and Mladenow et. al. (2012) point out that the generic strategy for adapting to disruptive technology, can be reactionary, and takes time to gather information often resulting in a late adaption, seen in Case Two.

5.1.3 Case Three

The final case studied was in the forestry industry, exploring a tree farm, which had a disruptive technology in terms of machinery, specifically a Harvester, which took the job of eight different tools and people combing them into a single machine. Parker and Castleman (2009) discuss in their work TAM as a strategy for adapting to disruptive technologies, and note TAM to be an intuitive approach, which is exhibited in Case Three. In the 2009 article TAM is explained as an individualistic strategy, where decisions are based on the perception of the decision makers, despite limited research (Parker & Castleman, 2009). The co-CEOs did some preliminary research on the disruptive technology, saw that it was becoming popular in the industry, discussed it with the employees, but ultimately made the decision themselves. According to the authors, this strategy is most useful for smaller businesses who are more nimble and can adjust more quickly to changes, and also relies heavily on the good decision making of the leaders. This is in line with findings from Case Three, whose decision to adopt was driven mainly by leadership’s perception of the threat, and potential outcomes.

5.2 Maintaining a Competitive Advantage

5.2.1 Case One

When looking at the competitive advantage strategies, Case One utilized Porter’s (2008) differentiation strategy, which employs an advantage through a unique product, or value proposition. Case One does this not only in their original business mission and client relationships, but during the adaption to the disruptive technology process. They employed
differentiation by using digitalization to offer a unique service to its customers, which no other organization offered in the area at the time. In this fashion they reiterated their commitment to service excellence, and conveyed that excellence to their clientele. The family business used Porter’s differentiation strategy in combination with the disruptive technology in order to not only maintain but gain a competitive advantage, while adapting to the disruptive technology. In keeping with Porter’s (2008) strategy they actually used the disruptive technology to create unique value for the business, and strengthen their competitive position in the industry.

5.2.2 Case Two

Case Two utilized Porter’s (2008) focus strategy, specifically market focus, in order to maintain a competitive advantage during the adaption to the disruptive technology of automatization. Porter’s (2008) market focus is explained as a firm narrowing in on an individual target market, which is exhibited in the case of the dairy farm. Case Two also used the disruptive technology to help with its competitive advantage, by adapting the robots into its milk production it was not only able to produce more milk efficiently, the farm was able to gain higher control on its quality of milk by having free ranged cattle. This is a narrower market of the dairy industry, producing sustainable milk with free-range cattle that go in and get milked when they want, a process that is required for an “organic milk” label (Porter, 2008). The high degree of control they exercise on the milk means they can ensure no pesticides or added hormones to the product. This also ties in with the market focus competitive advantage strategy, because the farm has an exclusive contract with Arla.

5.2.3 Case Three

The final case used Furrer et al. (2008) and Hoskisson et al. (1999) competitive advantage strategy, RBV, which is used to apply all the company’s resources in the most effective and efficient way possible. Case Three used this strategy during the adaptation of harvester machinery, by using a combination of all their resources to gain a system to cut the trees in a quick and effective matter. During adaptation the tree farm maintained a mix of old and new equipment, using the disruptive technology, the harvester as a quick way to cut and trim the trees, and using older equipment to move the logs after inspection. Case Three exhibits RBV as a competitive advantage since they chose to use older equipment, in combination with the new disruptive technology in order to have the most efficient manner to cut, trim, inspect, and sell the trees. They maintained a competitive advantage that they already had in the
industry, by being able to sell a higher quality and larger volume of trees quickly to companies such as Södra.

5.3 Family Influence

5.3.1 Case One

The similarities among the cases begin to arise when looking at the cases from a family influence perspective. In Case One there is clearly a high family influence seen in combination with the visionary leadership and the differentiation strategies, where the decisions for both strategies were decided upon by the leadership of the business. In this case not only was the leadership the decision maker, they were the ones who kept the business moving forward during the changeover period. In the interview, the MD clearly expressed the family influence theory of stewardship. The leadership in Case One emphasized the importance of taking care of the family, business, and employees through communication and transparency. Although it is important to take care of the employees MD made the point that it is still a business there to serve the customers and be profitable, in order to ensure the long term survival of the company. The leaders desire to ensure the long term success of the business ties in with stewardship, since they understand and perceive themselves as taking care of not only the organization, but the family and employees.

5.3.2 Case Two

Case Two also exhibited the family influence strategy of stewardship, which is seen in everything from the management of the employees and animals to the introduction of new technologies. The CEO of the Glömsjö Gård made this clear when he used generic strategy in combination with a market focus strategy. By using the generic strategy he showed that he did not wish to risk the business on adapting to a new technology to quickly, without research, and continued to show this by adapting the robots to the business in order to ensure a long-term sustainable business. The decision to adapt was wise, especially since it resulted in a longer term contract with a large dairy seller, Arla. The CEO understands he needs to take care of his family first and foremost, and does this through the business, as well as take care of his employees and animals. Although it is a business, Glömsjö Gård does employee people and assists in keeping food on the table for those involved. The stewardship leadership style is simply another aspect the CEO uses to run a successful business. It is clear that his leadership is the final say, and aims to create a long term business.
5.3.3 Case Three

Stewardship is showed by the co-CEOs in the third case as well. Once again this case shows that family influence is key in all the decision making processes. While the leaders of the business made decisions to adapt to disruptive technologies, they used TAM, which relied mostly on their instincts with some research and conversing with the staff. The choices the co-CEOs made were made with the intent to move the business forward, while gaining longer term, more sustainable business practice. In this case they were able to cut down on the amount of equipment needed, but managed to do more work faster without having to hire or fire anyone. The leaders came up with a plan that takes care of everything from the family and trees to the employees, showing that stewardship is leading and understanding how to best manage resources in order to ensure long term successes for those involved.
Chapter Six: Discussion

This chapter ties the theories with the data received during the case interviews. It outlines the main things found, and gives a clear picture of the information. Finally, it gives a model which helps interpret the information learned.

When reviewing all three cases and all three factors a trend emerges. Although all of the family businesses were in different industries, with different disruptive technologies, none had the same strategy when it came to adapting to the disruptive technology. In all three cases, there were compelling reasons to adopt the disruptive technology. What seems to have determined their level of success in improving their competitive positioning is the degree of confidence in the decision making process of adopting and implementing the technology.

This is the same when it came to maintaining a competitive advantage, or in some cases gaining a competitive advantage, the strategies were different in all cases. Two of the family businesses used classic Porter principals, differentiation and market focus while the third used RBV; all were able to keep or expand their competitive advantages. The similarities arose when it came to the family influence strategy. Even though there were correspondences which could be drawn when it came to things such as communication, where all interviewees emphasized the need for effective communication in the company in order to have a successful adaption to any disruptive technology, effective communication itself is not a competitive advantage.

Therefore, the main commonality these companies shared was the stewardship nature of the family owners and leaders. An attitude of stewardship heavily influenced all the decisions made by the leaders of these businesses. Final decisions came down to the strategic leadership by the family influencers over the businesses which caused the adaption, and maintained the competitive advantage during the adaption process. The technology adaption was driven by the benefit and perception of value the technology could give the family business, for all generations in the family. It was the family’s leadership that gave them the desire to learn, ability to embrace the cost, insight to gain the longer term value, which allowed the adaption of the disruptive technology, when used, improved what existed or allowed them to disregard the existing and took on the new gaining a competitive advantage. Because of their multigenerational view these family businesses all have the unique advantage of true long-term planning, and the history to understand the fundamentals of their market. Each of the leaders in each of the businesses studied truly saw themselves as stewards of their family trust.
To understand the intricate interrelationships between family influence, adaption to disruptive technology, and competitive advantage, one needs to understand their co-dependence. Figure 2 is offered to help visualize the concept. Family influence plays a dominant role in these relationships. As competitive advantage is defined by the values at the heart of the business, it is an inception of the family in control. At the same time, in striving to maintain competitive advantage, a strategic adaption to novel technology may prove vital, either due to sweeping changes to the industry, or curbing competitor opportunities to take up market share. However, whether an adaption would be successful or not, or even undertaken in the first place, is also determined by the influence the family exerts. If the values of the business do not support such adaption, it may be foregone completely. Successful transformation is dependent on leadership’s decisive commitment to the adaption, its communicating the importance to employees, and maintaining their support for their decision.

**Figure 2: Family Influence on Adaption and Competitive Advantage**
Chapter Seven: Conclusions

This study set out to explore how family businesses handle the challenges brought about by disruptive technology, while maintaining competitive advantage, and understand what drives the decisions behind this process. In order to provide comprehensive answers, in-depth interviews were conducted with three family firms, who had successfully dealt with disruptive technologies when reviewing the study as a whole, it is critical to ensure the research questions were answered. The first question was: What strategies do family businesses use to adapt to disruptive technology? This varied by each case and the disruptive technology experienced. While Case One used visionary leadership, which relies on the leadership in the firm, Case Two relied more on information, and not taking to many risk which ended up being Porter’s generic strategies. Meanwhile, Case Three utilized the technology acceptance model, which used little information, and depended upon the intuition and decision making of the co-CEOs.

The second research question was: How do family businesses maintain competitiveness while adapting to disruptive technologies? Once again the research showed that all cases responded with a different competitive advantage strategy. In the first case Porter’s differentiation was used to not only maintain but gain an advantage, and in the second case Porter’s market focus strategy helped the business regain a competitive advantage. Meanwhile the third case had a bit of a mix but mostly focused on Furrer et al. (2008) and Hoskisson et al. (1999) resource based view.

Although, all cases adapted to disruptive technologies and maintained competitive advantages differently they all have the same degree of family influence which is what made them successful. All cases studied used a form of stewardship, where they saw the business as a responsibility to protect the family, and often the employees. In these case studies it appears that the higher degree of family influence the more they perceive the need to maintain their competitive advantage, the more they can survey disruptive technologies and then evaluate if they can modify existing resources or if needed embrace (absorb) a new business practice. So for family business leadership that will choose to bear the cost of discovering and learning new business practices that increase the value of their business (a long term view over profits) is indicative of a business that will survive for generations.
Chapter Eight: Contributions and Limitations of the Study

8.1 Contributions to Theory

Give the number of theories already available, it was not the author’s intent to expound a new theory of understanding. It must also be recognized that the theories considered are constrained by the small sample size and the fact that all the businesses that were willing to be interviewed are successful. With that said, this case study does reinforce several of the current theories for disruptive technology adaptation and maintaining competitive advantage. Specifically when dealing with disruptive technology adaptation; Visionary Leadership theory, Porter’s generic strategy, and the intuitive TAM approach were all supported. When looking at competitive advantage Porter’s classic theories for Differentiation and Market Focus were once again supported as was the theory for Resource-based view. What was most surprising was the singular focus on the Family Influence on the Business Strategies where all the families effectively used Eddleston, & Kellermanns (2007) view of Stewardship.

Given the small sample size it cannot be said that Stewardship theory, with its long term view of success, is the effective response to maintaining a competitive advantage when faced with disruptive technologies. In fact one would expect Chirico & Salvato (2008) Knowledge Integration theory should dominate in these scenarios. However, given the nature of the businesses evaluated and perhaps the family dynamics that dominate the conservative parts of Sweden where the family businesses were located it is clear in this limited study that Stewardship theory dominates. Consequently Figure 2 is offered as a way to understand this phenomena, how Stewardship can guild the decisions to implement, ignore or adapt disruptive technologies in order to maintain competitive advantages.

8.2 Contributions to Research and Practice

The field of Family Business demands ever more attention, and could reveal valuable findings about the very workings of business in general, undoubtedly generating useful results for non-family firms. The qualities of family business are a testing ground for business research. The focus on a narrower array of enterprises, and extracting the specific methods employed to adapt to radical changes in the business environment is highly beneficial for entrepreneurs and business leaders. However, this style of research has not been a method of choice for existing
literature. Also, it could provide family business decision makers with studies of situations and environments comparable to their own, thus expanding the number of solutions.

This study emphasizes the role of stewardship, while it has been studied previously it has not been found to be such a definitive driver in disruptive technology or family business leadership. Stewardship has held a historical place of significance in family businesses that were handed down through generations (Buys & Cronje, 2013) and now holds an ever growing place in family business research. Additionally, the concept of connected research; as in this example on disruptive technologies and competitive advantages as linked to family business decision making is a gap in the literature that needs further exploration. The first hand interviews with the family businesses are vital to developing the field. Due to the unique nature of family businesses and intricate way of functioning, they provide an unmatched opportunity to grasp fundamental business concepts of leadership and approaches to market.

This study also added to understanding and the practice on how business should react to disruptive technology particularly in a family business context. Raising this question, exploring the matter, and providing reports on family business experience in such situations serves other enterprises by providing awareness and perspective. Knowing what worked, and more importantly what were the decisions motivated by, serves other family businesses by showing examples that are carefully scrutinized to provide actionable insight.

8.4 Limitations of the Study

While this paper attempts to fill a specific gap in the literature on family businesses and their ability to cope with disruptive technology, it is not without its shortcomings. One could argue that the decision to focus on only three companies limiting in its nature. This is also a break with the philosophy of existing literature in this field, which often prefers the use of widespread surveys. However, such an approach would largely rule out the possibility to single out the unique strategies used to deal with disruptive technology. The validity and reliability of this paper suffer due to the interactive nature of the data collection. As Have (2010) explains, interviews are a result of the mutual interaction between interviewer and respondent. In the process of asking questions, receiving answers, clarifying information, and interpersonal exchanges the research may exert some degree of influence on the interviewee. Thus, one cannot simply assume the provided answer as a clear representation of the respondent’s beliefs, which in turn slightly damages validity. As mentioned earlier in the paper, validity is also slightly hampered by the choice of interpretivism instead of a positivistic approach.
References


PwC. (2016). The missing middle: Bridging the strategy gap in family firms.


Appendixes

Appendix I: English Interview Questions

Interview Questions

*A copy of these questions can be provided in Swedish*

Purpose Statement
The purpose of this interview is to gain insight into the strategies that family businesses employ when faced with the challenges of disruptive technology. The interview consists of (number of) questions, wherein the first part are meant to introduce the interviewee and company, and the latter part explores the decisions and processes to maintain competitiveness in the face of disruptive technology. The information will then be used to provide a first-hand account of family business decision makers' responses to such challenges, and complement the theoretical understanding of the subject. All measures are taken to ensure the safe handling of the data, and adherence to ethical principles.

General questions

1. Please briefly describe the company (e.g. history, products, market, and customers)
2. Kindly describe your position and responsibilities in the company.
3. Who are the current (and former) owners of the family company?
4. Do some family members currently (or previously) work in the family firm? If yes, what are their positions?
5. Are strategic business decisions made by family members or influenced by owner’s family values?

RQ1: What strategies do family businesses use to adapt to disruptive technology?

1. What do you believe the biggest disruptive technology the business has ever dealt with?
   a. What was the source of this disruptive technology?
   b. Did the firm perceive it to be a disruptive technology when you first heard of it?
   c. What parts of your business were affect by this disruptive technology?
   d. Was any family employee personally affected by this disruptive technology?
   e. How do you think the family business handled it?
2. What was the effect of the disruptive technology on the company (including the people)? On the industry?
3. Are there any inherit strengths or weaknesses in regards to adapting to disruptive technology stemming from the fact that the company is a family business?
4. How did you react/respond to the disruptive technology? For example did you adopt the technology or improvised by inventing or improving the internal technology to counter the disruptive technology?
   a. Please explain the reason behind your choice?
5. Who were the principal decision makers on how the family company react to disruptive technology? Family owners or non-family employee? Why?
a. Did your organizations perceive this disruptive technology as a crisis, and if so would you argue that crisis management was key in adapting to the technology?

6. Are there mechanisms in place to identify and handle the emergence of disruptive technology, and its potential harmful effects on the company?
   a. How does this company prepare for potentially disruptive technologies?

RQ2: How do family businesses maintain competitiveness while adapting to disruptive technologies?

1. What do you perceive your competitive advantage to be overall?
   a. Where does that advantage stem from?
   b. Is there something inherent in the family, the business, its assets, or structure that is the source of that advantage?

2. What are your strategies for adapting to disruptive technology? Do you believe they are better than your competitors’? Why?

3. Why was your firm more/less successful in adapting to the said disruptive technology compared to your competitors?

4. Is there something inherent about the family, or business or was it the adaption process that helped with the adaptation process?

5. Have you ever innovated something in-house which you thought might be a disruptive technology? Did it become one?

6. How was the communication within the business leading up to, during, and after the adaption process?
   a. Was it clear to everyone that the disruptive technology was causing changes in the business or was the perception different (i.e. changes for another reason, or changes for the sake of change)?
   b. Did the fact that it was a family business, where the leadership core is supposed to be united around a common core, help reach decisions more quickly?

7. How did the business maintain a competitive advantage during this time? Did the adaption to the disruptive technology lead to a competitive advantage?
Appendix II: Swedish Interview Questions

Intervju frågor

Syfte
Syftet med denna intervju är att få insikt i de strategier som familjeföretag använder när de möter utmaningarna av störande teknik. Intervjun består av (antal) frågor, där den första delen är avsedd att introducera den personen intervjuad och företaget, och den senare delen utforska besluten och processerna för att upprätthålla konkurrenskraften mot störande teknik. Informationen kommer sedan att användas för att ge ett första hand redogörelse för familjeföretagens beslutsfattares svar på sådana utmaningar och komplettera den teoretiska förståelsen av ämnet. Alla åtgärder vidtas för att säkerställa säker hantering av data och efterlevnad av etiska principer.

Generella frågor

1. Ge en kortfattad beskrivning av ditt företag (till exempel historia, produkter, marknad och kunder)
2. Kan du kort beskriva din position och ansvar i företaget?
3. Vilka är de nuvarande (och tidigare) ägare av familjeföretaget?
4. Arbetar några familjemedlemmar för närvarande (eller har gjort tidigare) i familjeföretaget?
   a. Om ja, vad är (var) deras positioner?
   b. Om nej, varför inte?
5. Är strategiska (affärs verksamhets) beslut som fattas, gjorda av familjemedlemmar eller påverkas av ägarfamiljens värderingar?

IF1: Vilka strategier använder familjeföretagen för att anpassa sig till störande teknik?

1. Vad tror du är den största störande teknik företaget någonsin har upplevt?
   a. Vad var källan till denna störande teknik?
   b. Uppfattade företaget det som en störande teknik när ni först hörde talas om det?
   c. Vilka delar av företaget har påverkats av denna störande teknik?
   d. Var någon familj anställd personligen påverkad av denna störande teknik?
   e. Hur tycker du att de hanterade det
2. Vad var effekten av den störande tekniken på företaget? På industrin?
3. Eftersom det är ett familjeföretag, är det något speciellt med detta faktum som hjälper (eller förhindrar) företaget att reagera och anpassa sig till omvälvande teknik?
4. Hur reagerade/svarade ni på den störande tekniken? ( till exempel, adopterade ni den med de samma eller improviserade ni genom att uppfinna (eller förbättra) intern teknik för att motverka störande teknik?)
   a. Förklara orsaken bakom ert val?
5. Vem eller vilka var de ledande beslutsfattarna om hur familjeföretaget skulle reagera på störande teknik? Ägarfamiljen eller icke-familj anställda? Varför?
   a. Har företaget uppfattat den störande tekniken som en kris, och i så fall skulle man hävda att krisshanteringen var nyckeln att anpassa sig till den nya tekniken?
6. Finns det mekanismer tillgängliga för att identifiera och hantera uppkomsten av störande teknik och dess potentiella skadliga effekter på företaget?
   a. Har företaget förberett sig för potentiellt omvälvande teknik?
IF2: Hur kan familjeföretag bibehålla konkurrenskraften och samtidigt anpassa sig till banbrytande teknik

1. Vad anser du generellt är er konkurrensfördel?
   a. Vart kommer denna fördel från?
   b. Är det något i familjen, företaget, dess tillgångar, eller struktur som är källan till denna fördel?

2. Vilka är er strategier för att anpassa er till störande teknik? Är de bättre än era konkurrenters? Varför?

3. Varför var ert företag mer eller mindre framgångsrika i att anpassa sig till XXX störande teknik jämfört med era konkurrenter?

4. Finns det någon inom familjen, företaget eller var det anpassningsprocess som hjälpte er med få en lättare anpassning till den nya tekniken?

5. Har du någonsin förnyat något internt som du trodde kan vara en störande teknik? Blev det en?

6. Hur var kommunikationen inom verksamheten som ledde fram till, under och efter anpassningsprocessen?
   a. Var det uppenbart för alla att den störande tekniken orsakade förändringar i verksamheten eller var uppfattningen annorlunda (det vill säga ändras av en annan anledning eller förändringar för förändringens skull)?
   b. Hade det faktum att det var ett familjeföretag, där ledningskärnan skulle förenas kring en gemensam kärna, hjälpa till att nå beslut snabbare?

7. Hur upprätthöll verksamheten en konkurrensfördel under den här tiden? Fanns anpassningen till den störande tekniken till en konkurrensfördel?