

NHH



Securing Innovation through Corporate Spin-off

An Exploratory Case Study

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This thesis was written as a part of the Master of Science in Economics and Business Administration at NHH. Please note that neither the institution nor the examiners are responsible – through the approval of this thesis – for the theories and methods used, or results and conclusions drawn in this work.

Executive Summary

This thesis explores how a large established firm can secure and manage technology-based innovation through the use of a corporate spin-off. This study is performed in the setting of a large media firm and its four technology spin-off companies. The inductive findings of this research are then related to the broader literature on corporate spin-offs as well as the literature on organizational ambidexterity.

First, this study identifies antecedents conducive to innovation that were present at the parent company and were important for generating the innovation activities; and the study shows that once these antecedents were withdrawn it created doubt in the ability of the established firm to innovate through the spin-off mode in the future. This study also locates key behaviours and actions that the established firm used in its relationship to its innovation initiatives that aided these initiatives both before and after spinning-off. This research then uncovers the chief benefits that the established firm obtained by pursuing its innovation through the spin-off mode and argues that these benefits are the result of the exploitation of the innovations and the spin-off companies achieving ambidexterity themselves.

Additionally, this research finds that because of the type of spin-offs that are examined here, where the parent company uses the spin-offs' products, the parent was able to avoid the challenges of integrating the innovation that are often mentioned in the literature. Also, this study finds that the use of the parent company as a showroom for the spin-offs' products was a considerable advantage that has not been recognized yet within current strategy literature.

Finally, this study contends that future organizational ambidexterity research should examine the corporate spin-off mode, because this thesis indicates that it is a fruitful way for an established firm to achieve organizational ambidexterity and that this approach may have unique benefits.

Preface

This thesis is written as part of the Master of Science in Economics and Business Administration at the Norwegian School of Economics (NHH) where I am pursuing a specialization in Strategy and Management.

This thesis is also written as a collaboration with an ongoing research program at NHH, the Future-Oriented Corporate Solutions (FOCUS) program, which aspires to develop new insights, theories, and models of corporate solutions, establish collaboration between academia and practitioners, and produce practically relevant knowledge. My participation in the FOCUS program has greatly aided the research presented in this thesis and their support is very much appreciated. Doing this research has been both an informative and enjoyable process.

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1. Introduction

Many companies are experiencing a significant change in their industries as increased competition from globalization, exponential technological change, and industry consolidation disrupts markets (Balogun & Hailey, 2008). In order to cope with this increase in the rate of change firms must pursue innovation for their long-term survival.

Innovation is the process by which organizations employ their capabilities and resources to create new and better products, or improved methods to create their products, and increase their ability to respond to the needs of their customers (Burgelman, Maidique, & Wheelwright, 1996). In the current rapidly changing business environment firms must orient toward both innovation and efficiency to secure their long-term survival; however, innovation and change are often difficult and risky undertakings (Tushman & O'Reilly, 1996). Established firms can discover that innovation is particularly challenging due to cultural and structural inertia. Established firms also face the daunting challenge of maintaining and improving their ongoing operations and revenue sources while simultaneously taking risks on potentially expensive innovations.

In order to overcome the trade-offs and the divergent processes that innovation and efficiency entail, Tushman and O'Reilly (1996) argued that firms need to manage these tensions by becoming what they called *ambidextrous*. In the past two decades a significant number of studies have investigated the solution of organizational ambidexterity in different contexts and with different approaches; however, external strategies have only recently begun to be examined in the context of organizational ambidexterity, and among these the corporate spin-off mode has remained overlooked.

Corporate spin-offs are a frequent means by which large firms manage technology-based innovations and achieve ambidexterity. With this context in mind, this thesis examines a large established media firm and its four cases of technology-based innovation that were managed through the corporate spin-off mode. Within this setting, this qualitative exploratory study examines the following research question:

How does an established firm secure technology-based innovation through a spin-off?

1.1 Disposition

This thesis starts with an overview of the theory relevant to how firms manage innovation through corporate spin-offs. Thereafter, the research setting is presented to provide background information and context for the case study. Subsequently, the methodology is described, as well as the strengths and weaknesses of the methods used, and some ethical considerations. Then the findings accompanied by illustrative quotes and an explanatory model is presented. Next, the findings and the research setting are discussed in a comprehensive way in relation to the current research on this topic in the strategy literature. How the study supports, extends, contributes to, or contradicts the current theory related to the research question is explained. And lastly, the conclusions of the study in relation to the research question are explained, and the practical implications for managers, as well as suggestions of future avenues of research are suggested.

2. Theory

This section reviews the existing literature that is relevant to the research question addressed in this study and is referenced later in the discussion of the findings. The section primarily reviews the literature on Organizational Ambidexterity, but also presents the broader literature examining Corporate Spin-offs.

2.1 Organizational Ambidexterity

In order to remain competitive and to safeguard their long-term survival in increasingly dynamic market environments, firms must focus on both efficiency and innovation (Tushman & O'Reilly, 1996). Innovation and radical change are frequently challenging, expensive, and risky endeavours. Due to core rigidities (Leonard-Barton, 1992), and cultural and structural inertia (Tushman & O'Reilly, 1996), large established firms can find change and innovation especially difficult. As risky and potentially expensive innovations are pursued, the more stable revenues earned from the traditional business need to be maintained, forcing firms to manage two divergent processes to ensure their future success.

Prominent research has termed developing new knowledge as *exploration*, while refining established knowledge has been termed *exploitation* (Levinthal & March, 1993; March 1991). Exploration involves risk-taking, discovery, and a search for new alternatives; while exploitation is characterized by efficiency, convergent thinking, and refinement (Pandey & Sharma, 2009). Exploration and exploitation involve fundamentally different logics and conflicting skills, so firms often debate whether to focus on one at the expense of the other (Dosi, Nelson, & Winter, 2001). Research has shown that a heavy emphasis on exploitation tends to drive out exploration (e.g., David, Eisenhardt, & Bingham, 2009; Leonard-Barton, 1992; McNamara & Baden-Fuller, 1999). However, both activities are essential for the long-term survival of a firm, so their inherent contradictions need to be managed (Tushman & O'Reilly, 1996).

Adding to earlier literature recognizing the trade-offs of exploring and exploiting (e.g., Duncan, 1976; Levinthal & March, 1993; March, 1991; Thompson, 1967), Tushman and O'Reilly (1996) proposed that organizations need to be ambidextrous if they are to overcome this tension and achieve “the ability to simultaneously pursue both incremental and

discontinuous innovation... from hosting multiple contradictory structures, processes, and cultures within the same firm” (p. 24). This solution has been termed *organizational ambidexterity* (O’Reilly & Tushman, 2004; Tushman & O’Reilly, 1996), and in the past two decades there has been an explosion of both broad and deep research on this topic, examining a variety of different strategies firms use to achieve ambidexterity.

Many large organizations began with a process of exploration in their early history, but as organizations age they often become dependent on established routines and skills that facilitate inertial pressures and exploitation (Hannan & Freeman, 1984; Lavie, Stettner, & Tushman, 2010). Large established firms then often proceed to become even more efficient over time, as they utilize their accumulated experience and long-standing ties to customers (Penrose, 1959).

Studies have pointed to a range of ways a company or unit can balance both exploitation and exploration to become ambidextrous. Some have recognized that a decentralized structure, a unified vision and culture, and flexible and supportive leaders and management are antecedents to ambidexterity (Tushman & O’Reilly, 1996); while others have identified stretch, discipline, support, and trust (Ghoshal & Bartlett, 1994; Gibson & Birkinshaw, 2004), worker training and trust in relationships with management (Adler, Goldoftas, & Levine, 1999), or recruitment and selection, and the career path management of executives (Bartlett & Ghoshal, 1989) as antecedents.

Culture also appears to play an important role in a firm’s ability to achieve ambidexterity (Lavie et al., 2010). Organizational culture refers to the attitudes, beliefs, values, and experiences that guide organizational members’ behaviors (Alvesson, 2002). Strong and rigid cultures promote exploitation due to a group consensus on corporate goals and values (Andrews, Basler, & Coller, 1999; Sorensen, 2002) and this tends to inhibit the detection and response to environmental threats (Andriopoulos & Lewis, 2009). In contrast, a flexible, decentralized, and loose culture (Benner & Tushman, 2003), and an organizational mission that advocates continuous innovation (Ravasi & Schultz, 2006; Sidhu, Volberda, & Commandeur, 2004) facilitates experimentation. It has also been found that organizations low in power distance are more likely to generate exploratory innovation (Panday & Sharma, 2009; Rodriguez, Regina, & Hechanova, 2014).

Organizations also operate through organizational structures that define the distribution of resources, responsibilities, and power; and the formalization of these structures can restrict exploration and encourage exploitation in both processes or products (Lavie et al., 2010). *Organizational slack*, refers to the firm's ability to adapt to environmental variation (Bourgeois, 1981), and might be a significant moderator for change capacity and ambidexterity (Judge & Blocker, 2008). Also, *resource slack* refers to excess resources that are available beyond what is needed to run the firm (Nohria & Gulati, 1996). Some researchers believe that this type of slack in an organization can facilitate innovation and exploration (Sidhu et al., 2004) by buffering the firm from market fluctuations and downside risk (Levinthal & March, 1993; Nohria & Gulati, 1996). Slack can also be a facilitator of strategic or creative behavior in a firm (Simsek, Veiga, & Lubatkin, 2007). Insufficient slack may be harmful to innovation because it discourages risk-taking, yet excessive slack could weaken discipline; therefore, it is likely that an inverse U-shaped association between slack and exploration exists (Nohria & Gulati, 1996).

It has also been suggested that organizational slack is fundamental to explaining a firm's capability to explore, because it is related to managerial discretion (Mishina, Pollack, & Porac, 2004; Sharfman, Wolf, Chase, & Tansik, 1988). Managers play a crucial role in innovation initiatives. Innovation opportunities are more easily identified by frontline managers (Burgelman, 1983); however, ambidextrous top-managers are more responsible for choosing what innovations get pursued and the organizational structures used (Mom, Van den Bosch, & Volberda, 2007, 2009; O'Reilly & Tushman, 2004; Smith & Tushman, 2005). In order for an organization to balance ambidexterity successfully it must be governed by managers who are able to envisage both their present and future goals (Han, 2007; Tushman & O'Reilly, 1997).

The importance of autonomy is discussed often in the literature on organizational ambidexterity. Giving autonomy to exploring units increases their flexibility and their ability to develop working methods that allow them to accomplish their activities (Burgers & Jansen, 2008). Exploration should take place in autonomous (Burgelman, 1985; Hill & Rothaermel, 2003), loosely related (Orton & Weick, 1990), or structurally different units (Gilbert, 2006; Lawrence & Lorsch, 1967; O'Reilly & Tushman, 2004). However, there is recognition within the ambidexterity literature that there needs to be integration mechanisms between separated innovation units and the rest of the firm, and developing effective integration can be challenging (Jansen, Tempelaar, Van den Bosch, & Volberda, 2009).

Shocks and changes in the conditions that fostered organizational ambidexterity in a firm can hamper the ability to maintain it. For example, over the course of 50 years Hewlett-Packard shifted from being an instrument firm to a computer company through a culture that prized decentralization, innovation, autonomy in divisions, and a process of spinning-off new units once they had grown beyond a specific size. However, in Hewlett-Packard's more recent history, strict financial and efficiency controls, and a more centralized culture have destroyed this capacity for ambidexterity within the firm (O'Reilly & Tushman, 2008).

While there is a consensus regarding the need to balance exploration and exploitation, there is no general agreement on the means by which firms can achieve this balance (Adler et al., 2009). Temporal separation entails managing transitions between exploration and exploitation over time (Brown & Eisenhardt, 1997), while contextual ambidexterity involves individual employees making strategic choices between exploration and exploitation activities (Birkinshaw & Gibson, 2004). Structural separation seems to be the most known and discussed ambidextrous solution and involves simultaneous exploration and exploitation through separate organizational units within the same firm (Benner & Tushman, 2003). Structural separation "entails not only separate structural units for exploration and exploitation but also different competencies, systems, incentives, processes, and cultures—each internally aligned" (O'Reilly & Tushman, 2008, p. 192).

Using much of the same logic as structural separation, more recent studies have begun to look at external separation, where firms engage in ambidexterity through external units such as alliances (Lavie, Kang, & Rosenkopf, 2011; Lavie & Rosenkopf, 2006; Stettner & Lavie, 2014), acquisitions (Graebner, 2004; Stettner & Lavie, 2014), joint-ventures (Andriopoulos & Lewis, 2010), or skunkworks projects like spin-alongs (Michl, Gold, & Picot, 2012). Companies often use both internal and external operations to gain access to ideas, technology, innovations, and businesses that can fuel growth and enhance profitability (Keil, 2004; Sathe, 2003; Zahra, 2005). Stettner and Lavie (2014) analysed 190 U.S.-based software firms and found that ambidexterity across external and internal modes was more beneficial than balance within just a single mode; however, they only sampled and compared internal organization, alliances, and acquisitions.

As the case of Hewlett-Packard shows (O'Reilly & Tushman, 2008), corporate spin-offs, where an established firm places the responsibility for innovation initiatives in a separate company that it creates and retains some stake in, are an important and common way firms

manage innovation (Bower & Christensen, 1995). Despite this, the corporate spin-off mode has remained mostly unexamined in the organizational ambidexterity literature. According to Tushman and O'Reilly (1996) an ambidextrous organization is one that “is able to compete successfully by both increasing the alignment among strategy, structure, culture, and processes, while simultaneously preparing for the inevitable revolutions required by discontinuous environmental change” (p. 11), and many parent companies utilizing corporate spin-off strategies are able to accomplish precisely this goal. In the first edition of the prominent book, *The Innovator's Dilemma*, Christensen (1997) also constructs a convincing argument for the need for differential organizational alignments to balance exploration and exploitation in an established firm; yet he was sceptical of the ability to accomplish this internally, and in the end, he eventually argues that the exploratory unit should be spun-out.

2.2 Corporate Spin-Off

Research on spin-offs is somewhat scattered across different types of inquiries in strategy literature; a variety of very different types of spin-offs are examined, and even in the corporate entrepreneurship and corporate venturing literature where the most spin-off research has taken place, the spin-off mode remains under-researched (Agarwal, Echambadi, Franco, & Sarkar, 2004; Clarysse, Wright, & Van de Velde, 2011; Narayanan, Yang, & Zahra, 2009). Spin-offs are also discussed in the literature examining technology clusters (e.g. Garnsey & Heffernan, 2005; Keeble & Wilkinson, 2017; Vincett, 2010), and are recognized as frequently being key drivers behind the development of technology clusters. Although the terms exploration, innovation, exploitation, and efficiency are all used in the literature on corporate spin-offs, the setting is not considered within the framework of organizational ambidexterity nor is there often mention of the ambidexterity literature in most of the literature on corporate spin-offs.

Corporate spin-offs are ventures generated by an established firm as a separate legal company, although the parent firm maintains a financial stake and often representation on the board of directors (Agarwal et al., 2004; Helfat & Lieberman, 2002). While there are several different types of spin-offs, the spin-offs examined in this thesis are born from the parent firm's technology and knowledge bases and are exploited for the purposes of growth and advantage, thereby aiding the parent firm (Ireland, Covin, & Kuratko, 2009; Narayanan et al., 2009; Van de Velde & Clarysse, 2006).

Burgelman (1983, 1994) views the parent firm's impetus for starting new ventures as induced by their corporate strategy or autonomous activities that are beyond the scope of the firm's strategy. Burgelman (1983) also identifies middle managers as key players in supporting early exploration, who then combine exploration with other capabilities within the firm and go on to generate a strategy for the new area of business. The role of top managers is that of key actors who recognize this process among middle managers and allow it, rather than plan it. Top-management's role is typically to support the early spin-off with policy support and start-up capital (Clarysse et al., 2011).

Spin-offs draw on the parent firm's people, technology, information, and capital in their early stages and frequently go through a period of incubation before spinning-off (Ferriani, Garnsey, & Lorezoni, 2012). Sufficient autonomy, the absence of bureaucratic inertia, and simpler structures enable spin-offs to creatively combine and exchange resources through more inventive and efficient techniques than other new entrants (Agarwal et al., 2004). Spin-offs also gain a market advantage because they inherit routines and procedures developed earlier in the parent firm (Phillips, 2002), and also because they receive support from the parent and a continued access to their resources (Zahra, 1996). Frequently parent firms will spin-off an entire division that has developed a new technology, and their initial size and well-developed organizational structure will reduce their need to search for resources and knowledge (Bruneel, Van de Velde, & Clarysse, 2013)

Spin-offs also benefit greatly from the parent company's social network, contacts, and corporate networks (Higgins & Gulati, 2003; Yli-Renko, Autio, & Sapienza, 2001), and this relationship to the parent company gives a spin-off a legitimacy from inception (Bruneel et al., 2012) that start-ups and other types of new ventures do not have access to (Bitektine, 2011; Zimmerman & Zeitz, 2002). Spin-offs can leverage this initial legitimacy for resource acquisition as they build up their own reputation and identity (Sahaym, 2013). A spin-off's relationship with the parent firm gives it a higher status (Meyer & Rowan, 1977), which can aid in the acquisition of external resources like capital and financing that would otherwise be beyond the grasp of a new firm (Pfeffer & Salancik, 1978).

The new customers a spin-off gains can be a valuable source of imported knowledge (Von Hippel, 1988) which can then become an asset exported back to the parent firm. The parent firm also benefits from the decrease in administrative burden after the spin-off, the freeing of

their resources for the utilization of the core business, and the ability to have revolutionary ideas explored outside their main business autonomously (Ito & Rose, 1994).

While the vast majority of the literature views spin-offs as vehicles for exploration, Clarysse and colleagues (2011) view them differently and believe that although spin-offs will still be engaged in explorative activities due to their history of innovation, their main focus will actually become exploiting the knowledge they generated at their parent company. Spin-offs can become an expedient way for established firms to exploit the opportunities they have located and developed (Bruneel et al., 2012; Narayanan et al., 2009). Hill and Birkinshaw (2006, 2014) further found that corporate ventures and discrete organizational units show superior strategic performance and survival when they became ambidextrous within their own units.

Reviewing both the corporate spin-off literature as well as the research on organizational ambidexterity assists this study in developing a better picture of how a firm can achieve ambidexterity and secure their innovations through the corporate spin-off mode.

3. Research Setting

This section briefly presents the established firm and its spin-off companies that form the setting for this thesis. This case presentation is a summary of the companies involved and is provided to serve as background information and to give context. This section was created from information from both the primary and secondary sources described in the methodology section of this thesis.

3.1 Presentation of the Cases

All the data and company information has been anonymized to protect the informants and the companies; therefore, pseudonyms are used to identify the companies throughout the thesis. Established Firm has created several other spin-off companies in addition to the four examined here and even invested in some firms as well; and while those companies were examined and discussed to a limited extent in the interviews and secondary data, they are not explored in this research because they were either not technological innovation, or Established Firm no longer had any ownership in them. The spin-offs examined here were selected because they represent technology-based innovation and were either currently or recently owned by Established Firm. Also, the dates were removed during the editing of this thesis to grant even greater anonymity to the informants.

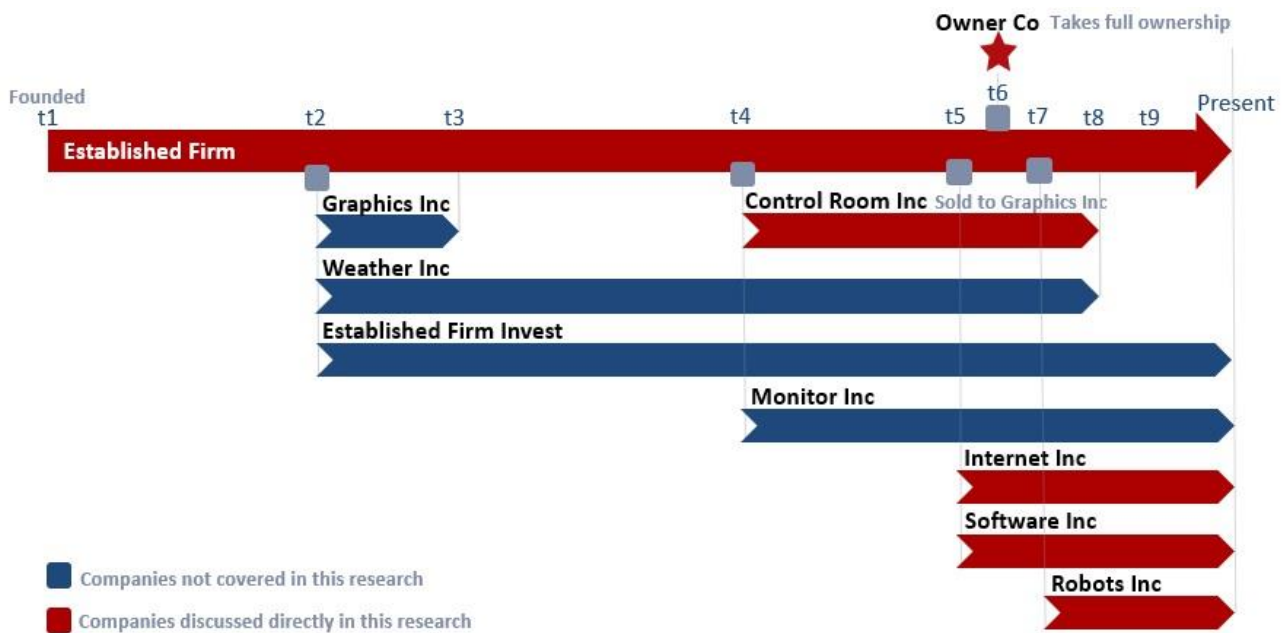


Figure 1: Timeline of the research setting. Covers approximately 30 years.

In the figure above (Figure 1) all of these spin-offs are still in existence, their end dates on the timeline simply represent when Established Firm relinquished their ownership stake in them.

3.2 Established Firm

Established Firm is a major Scandinavian media company; now the largest commercial firm of its type in its country. Established Firm was founded to compete with the large state media company that previously held an industry monopoly in its country.

At the founding of Established Firm, the country's parliament mandated that none of the owners were to own more than 20 percent of the shares in the company; therefore, Established Firm was initially controlled by a consortium of large Northern European media companies. In t6 (Figure 1), the country's government ended the ownership restrictions on the company and one of the partial owners, Owner Co, took control of 100 percent of Established Firm. Since Owner Co has taken full ownership of Established Firm they have progressively gotten more involved in the company's operations and the spin-offs; and later, Owner Co, placed their former CEO at the head of Established Firm. Owner Co has a focus on efficiency that was not previously a priority for Established Firm, and this has changed the way the finances are organized, the culture, and the relationships that Established Firm has with its spin-offs.

Established Firm is an opportune and interesting case to examine how external ambidexterity can be accomplished. As a leader in its market, this large company has generated and implemented many innovative technological solutions for its various needs by establishing a wide variety of spin-off firms with distinct capabilities. Established Firm first started spinning-off companies a few years after they were founded and has continued to do so up until its most recent spin-off, Robots Inc. Established Firm continues to be a customer of its spin-off firms as they mature and has gained from the services and products they provide. The products that Established Firm's spin-offs have created are used every day in their business operations.

For the purpose of technological innovation and investment, Established Firm has also made some acquisitions through its subsidiary Established Firm Invest; however, these are not explored in this research.

3.3 Control Room Inc

Control Room Inc is a digital automation system that allows its clients like Established Firm to save costs and streamline the production of their media product. Control Room Inc's products allow the work that six or more employees would traditionally do to produce media, to be accomplished by just one employee. The technology Control Room Inc originally started with was created inside of Established Firm by an employee who worked for nearly four years developing the software. The two managers most involved in the founding of Control Room Inc received some ownership in the company once it was spun-off, but Established Firm maintained the majority of the ownership.

After the initial product was developed inside Established Firm they tried to sell it to other clients in Established Firm's industry; however, potential customers were hesitant to purchase the product while it was still within Established Firm. Potential customers thought they would not get the personalized service they wanted or that Established Firm's needs would get priority over theirs if the product was not spun-out.

Within the first year of spinning-off from Established Firm, Control Room Inc was able to secure several prominent clients in Northern Europe. Part of this success was due to the nature of this type of media industry and its willingness to explore new products and take on innovative technology, but also having Established Firm as a reference and location to demonstrate their product was very valuable.

Control Room Inc was sold later by Established Firm and incorporated into Graphics Inc, a company that had been one of Established Firm's first spin-offs. Established Firm no longer owned any stake in the Graphics Inc when they bought Control Room Inc. Control Room Inc has since merged with and been absorbed by Graphics Inc. While Established Firm no longer has any ownership in Control Room Inc and Graphics Inc they still rely on and benefit from their products, and these spin-offs collaborate with Established Firm's other spin-offs such as Robots Inc.

3.4 Internet Inc

Internet Inc is an online provider for the type of media products that Established Firm creates. The company is 100 percent owned by Established Firm and the entire board is

composed of Established Firm people. Internet Inc was spun-out by the managers and employees of an innovative subdivision within Established Firm that was created ten years earlier. Internet Inc is a spin-off company that has essentially commercialized and marketed a technology division that was created originally within Established Firm for their needs. The division and product Internet Inc originated from still exists in Established Firm and is the most successful division of its type in Scandinavia.

While running the innovative technology division within the parent company, the managers of Internet Inc saw the strong potential to create a company with the technology and experience they had gained. They approached Established Firm and asked for their support in the creation of Internet Inc, but it actually took a few years to create business plans and convince Established Firm to allow them to spin-off Internet Inc. Established Firm did not give any ownership to the managers of Internet Inc, and they also made it clear to them that if the business was not successful they would just reintegrate it back into the original Established Firm division.

Since its creation, Internet Inc has developed a larger and more advanced product offering than it initially left Established Firm with, it has grown substantially in size, and has many large clients internationally. Internet Inc's clients are some of the largest firms in Established Firm's industry globally, and its products and services allow these companies to create and run divisions like the one that Internet Inc originated from.

3.5 Software Inc

Software Inc was founded by an Established Firm employee who pitched the idea for the company to Established Firm's executives. Software Inc's business is delivering media industry software products that help large media firms provide their products quicker and more cost-effectively. Established Firm has maintained around 50 percent ownership in Software Inc.

At the founding of the company, Software Inc provided an internet service for Established Firm to easily deliver its media content, and they were an early provider of this type of technology. However, very quickly other major competitors started investing heavily in creating competing solutions for what Software Inc was doing, and it was not long before competitors' products were providing similar services in better and more cost-effective

ways. This stalled the growth of Software Inc and they entered into a new phase of product exploration as the company searched for something new to provide that was superior to what already existed in the market. Several informants viewed this process as Software Inc struggling while they innovated.

Software Inc changed CEOs in t8 (Figure 1) and found an effective strategy for what they wanted to do and identified the services they wanted to provide going forward. The company now creates tools to help media providers like Established Firm manage their workflows and logistics, which increases production speed and reduces the number of employees needed to manage these types of tasks.

3.6 Robots Inc

Robots Inc is Established Firm's most recent technology spin-off. The company creates several robotic automation products that improve the look of Established Firm's media product as well as reduces the number of employees required to produce it.

Robots Inc was actually started by a contractor that worked on projects for Established Firm as well as with several competitors. Because the founder of Robots Inc was unable to develop the initial product they had conceptualized and secure funding on their own, they came to Control Room Inc and Established Firm to get investment. Established Firm took ownership of approximately one third of the company in return for the first investment but did not give the company much additional support or oversight. Robots Inc then continued to struggle with developing its innovation on budget and came back to Established Firm to get a larger amount of money in the form of a loan. After yet another year, Robots Inc was out of money again and still had not yet launched their initial product. Established Firm was very reluctant to give funding to Robots Inc once again, so a government organization invested more money into Robots Inc. With the additional support from the government organization, Established Firm then decided it would match that investment with equal funds. At this time, Established Firm also made the former CEO of Control Room Inc the new CEO of Robots Inc.

Robots Inc was finally able to launch their first robots and sold two of them to Established Firm, and then it sold seven more to other large media companies. Due to technical problems with how the robots operated, Robots Inc abandoned this initial product and is now

producing different and more advanced automation systems. Robots Inc has launched its new line of automated cameras and trolley systems just this year.

3.7 Summary

As detailed above, the setting for this research explores an established firm that managed its innovation needs by spinning-off its solutions into separate companies. Most of the spin-offs represent a process innovation for Established Firm that reduced the number of employees needed and improved efficiency; however, Internet Inc was a more disruptive innovation. All of the solutions were achieved through significant technological innovation designed for clients resembling the parent company, rather than the parent company's customers or an unrelated market. All of the spin-offs' products were originally designed for Established Firm's needs and the parent company continued to use their products after the companies spun-off, even after some were sold off completely. All of the spin-offs gained clients and improved their products after spinning-off. Established Firm benefited from these improvements because they rely on these innovations and the products are tightly integrated into their operations.

However, there are also notable differences between the spin-offs. Control Room Inc's innovation was developed inside Established Firm by an employee who was allowed to split part of their time between working on innovating and performing their regular work tasks. This was different than how innovation was accomplished by the others. Internet Inc is also unique in that it was spun-out of an online service division within Established Firm that still exists inside the parent company and is still highly successful. Internet Inc is also different from the other spin-offs in that it was not designed to reduce the number of employees needed to perform tasks and improve efficiency, but rather their innovations are designed to support media companies like Established Firm in distributing their product online. Internet Inc's product is more disruptive to Established Firm's industry than the other spin-off's products. Both Internet Inc and Control Room Inc developed their initial innovations inside Established Firm and were able to start selling them as soon as they spun-out; this is in stark contrast to both Software Inc and Robots Inc where employees or contractors of Established Firm were spun-out first and then developed their innovations externally from Established Firm and inside the new spin-off company. Also, during phase where Software Inc and Robots Inc were developing their innovations, both firms were viewed as struggling.

4. Methodology

This section details the methodology used to answer the study's research question. First, the research design is explained, followed by a presentation of the data collection process, and a description of the methods used to analyse the data. Next, the strengths and weaknesses of the methods will be elaborated. And lastly, the ethical considerations and challenges of this study will be discussed.

4.1 Research Design

The research design gives the plan for how the research question will be answered and how the study will be structured (Saunders, Lewin, & Thornhill, 2016). Since only a limited amount of research has been done to examine *how an established firm can secure technology-based innovation through a spin-off*, this thesis uses a qualitative exploratory design to garner new insights into this process. When researchers are engaged in exploratory studies they should observe, gather information, and build explanations (Ghauri & Grønhaug, 2005). The exploratory design of this research allows for a broad lens and flexible focus that can be adjusted as insights are generated. This is a useful design to gain an initial understanding of a phenomena, or to clarify current understanding (Saunders, et al., 2016).

This thesis is a *case study* of the how an established firm secured technology-based innovation through the spin-off mode. Case studies investigate the underlying causes of a phenomena within its context and are useful for analysing questions of 'what', 'why', or 'how' corresponding with the research question examined here (Saunders et al., 2016).

4.1.1 Research Approach

Both deductive and inductive approaches are used in this study. *Deduction* tests and develops existing theories; while *induction* seeks to understand a phenomenon through the analysis of the data and allows for explanations to be conceived beyond those that were expected beforehand (Saunders et al., 2016; Suddaby, 2006). The research setting was located deductively within the context of external ambidexterity; however, the data is approached inductively and the findings originated from within the data itself. The inductive

approach is appropriate because the goal here is to develop new insights and theory, and to remain open to multiple explanations. Finally, the findings from the data are later considered in relation to existing theories and frameworks from across current strategy literature. This pattern-matching adds established insights to the findings and greater validity to the research (Bourgeois & Eisenhardt, 1988; Yin, 1984). Research of this type typically starts with a 'surprising fact', and then builds theory to account for how this occurred (Saunders et al., 2016). This research has the unique setting and context of a large established firm managing multiple innovative solutions by founding a variety of technology spin-off companies to secure its needs. That the established firm chose to manage its innovations through the corporate spin-off mode rather than in-house or through acquisitions, is provocative and worth investigating. The research question asks: *how does an established firm secure technology-based innovation through a spin-off?* This use of the exploratory research design and both the inductive and deductive approaches allows the data to drive and determine the focus and analysis of this study, while also permitting the insights of existing theory to better inform the study and provide answers to the research question.

4.1.2 Research Objective and Strategy

The study's findings are produced with the objective of aiding both practitioners and researchers with insights into how a large established firm, such as the one examined here, can secure innovation through the spin-off mode.

This is a qualitative study, as it utilizes non-numerical data in the form of interviews, public information, and documents; the qualitative method is appropriate for this type of study where the objective is generating new insights (Saunders et al., 2016). To best understand how an established firm secures innovation through the spin-off mode, the thoughts and opinions of the relevant executives at both the established firm and several spin-offs are examined, as well as a significant quantity of public information regarding the histories of the firms involved.

This research examines one established firm and its multiple embedded cases of innovation spin-offs. The case was selected because it represents a critical example that is particularly informative regarding its unique setting and context. The case is unique in the sense that few firms have such a persistent record of creating spin-offs that meet their innovation needs.

4.2 Data Collection

This research was done with support of the FOCUS program at NHH. My supervisor, Professor Stensaker assisted with the collection of the primary data, and also a FOCUS program research assistant Ole-Martin Goksøyr, aided in the collection of much of the secondary data. This support was essential and was extremely helpful during the data collection phase of this research. This section of the thesis explains the type of data, how it was collected, and how it was handled.

4.2.1 Data Sources

This research utilizes both primary and secondary non-numerical data. Case studies allow for the triangulation of evidence through the use of several data sources (Saunders et al., 2016). The use of multiple data sources strengthens the grounding of the insights discovered in the research (Eisenhardt, 1989; Guba, 1981).

The primary data used for this research was semi-structured interviews with key top executives heavily involved in both the established firm and the spin-off companies (see Figure 2 below). Semi-structured interviews are often used in exploratory studies and are appropriate when there is a need to understand the reasons for the decisions that the participants have made (Saunders et al., 2016).

The secondary data utilized in this study consisted of public information in the form of the company websites, corporate press releases, LinkedIn profiles, government databases tracking company and individual ownership histories, and news articles published in the media. A PowerPoint presentation on the histories of the spin-offs was also obtained from a key informant at the parent firm who was also involved in all of the companies. Interview notes and memos were kept as well and became a valuable resource during the process of analysing the data.

4.2.2 Sample

The sampling technique used in this study was purposive, non-probability, and best described as *theoretical* sampling. In *theoretical sampling*, the researcher initially has some idea of where to sample, but not what to sample for, and participants are chosen as needed

and as the theory develops (Saunders et al., 2016). In theoretical sampling cases and participants are selected because they are well-suited for theory-building in the topic being explored. At the start of this study I was searching for cases of innovation through structural or external separation that seemed representative of organizational ambidexterity. The final research question came inductively from the data later during the collection process, but the case setting was deductively chosen because it was deemed auspicious for theory-expanding within organizational ambidexterity and developing insights into the setting.

To collect meaningful data, researchers need to negotiate access to relevant sources (Saunders et al., 2016). The supervisor for this thesis Professor Stensaker, had a key contact at Established Firm who recommended the names of several relevant informants to contact for interviews. Following the theoretical sampling approach, an additional informant was located by the needs of the emerging theory and evolving storyline (Saunders et al., 2016).

In theoretical sampling, the sample size can be viewed as sufficient once researchers have an overview of the topic and new interviews do not provide further information, this is termed *theoretical saturation* or *conceptual density* (Saunders et al., 2016). Following the methods recommended Charmaz (2011), analysis began early to help focus the interviews and direct the data collection. During data collection, the research question was discovered and a common story was clearly conveyed by the informants; it was then determined that theoretical saturation had been achieved. Theoretical saturation was markedly assisted by the frequent convergence of responses given by the informants.

All of the informants had a history as a manager at Established Firm or were an executive there; in addition, all of the informants also had a senior role at one or more of the spin-off companies either as an executive or a board member. Every informant also had a working relationship with one another and were involved in many of the same events, so the same questions could be asked of each of them to confirm or controvert the validity of the responses.

Several of Established Firm's other spin-offs and acquisitions were considered and discussed in the interviews, but because they were either not technology-based innovation or because Established Firm no longer had any ownership in them, only the parent company and the four spin-off cases presented here are examined in this research.

Established Firm's headquarters were visited as well as a media cluster location where the parent firm and several of the spin-offs also have offices. It was useful to see the working environments of these firms and observe a physical context for the setting that the informants were reporting.

<u>Interview Participant</u>	<u>Business Roles</u> (Time periods from Figure 1)
Informant 1	Established Firm (Chief Financial Officer, t1 – t5), Robots Inc (Chairman of the Board, t7 – present), Software Inc (Chairman of the Board, t5 – present), Internet Inc (Board Member, t4 – present). Graphics Inc (Board Member t2 – t3)
Informant 2	Established Firm (Director of Business Development, t8 – present), Internet Inc (Board Member, t5 – present)
Informant 3	Internet Inc (Chief Executive Officer, t5 – present) Established Firm, (Manager & Editor in Chief, Internet Subdivision, t3 – t5)
Informant 4	Robots Inc (Chief Executive Officer, t9 – present), Control Room Inc (Chief Executive Officer, t4 – t8), Established Firm (Manager, t2 – t4; Consultant, t8 – t9), Software Inc (Consultant, t8 – t9), Robots Inc (Consultant t8 – t9), Internet Inc (Consultant t8 – t9)

Figure 2: Overview of the informants' roles.

4.2.3 Qualitative Semi-Structured Interviews

Qualitative semi-structured interviews were used during the primary data collection. Following Saunders' et al. (2016) suggestions regarding data collection, a list of predetermined questions was prepared and the order of the questions varied depending on the flow of the conversation. The interview guides were expanded and focused after subsequent interviews, so that comparisons of key themes and questions could be made across participants responses. The questions were largely open-ended, and the participants were allowed to speak freely and to take the dialogue in the directions that they felt were the

most relevant. To heighten the trust between the researcher and interviewee, and to increase the chances that the participants would be forthcoming during the interview process (Saunders et al., 2016), three of the interviews were conducted in person; however, Informant 2 participated over the phone due to geographic distance and time constraints.

4.2.4 Interview Schedule and Interview Process

Participants were contacted initially through email by Professor Stensaker with information regarding the study, how the data was to be used, and they were also informed that the data would be anonymized. Further emails were then followed up with the participants and the interviews were scheduled by myself. Three interviews were conducted and recorded, each lasting approximately 90 minutes. Informants 1 and 2 were interviewed two-on-two, with Professor Stensaker and I at NHH; Informant 1 was physically present at the interview, while Informant 2 participated simultaneously over the phone. Informant 3 was interviewed one-on-one by me at Established Firm's headquarters; and lastly, Informant 4 was interviewed two-on-one, with Professor Stensaker and I at NHH.

Before the interviews, descriptive information about the participants and the company were collected to aid me in building the interview guide and ensuring a thorough understanding of the business setting and history. I strived to keep conversations regarding constructs and theories out of the interview, and instead attempted to nudge the conversation toward participant perceptions of histories, challenges, advantages, opinions, value assessments, and subjective experiences.

During the interview, all participants were asked to sign a consent form drafted by the FOCUS research program (shown in Appendix A). The consent form explained the FOCUS program, how the data was to be used, an explanation that the data would only be viewed within the FOCUS program, and that the data would be anonymized.

Interviews always started with questions regarding the biographical history of the participant, followed by questions regarding their history with Established Firm, the history of the spin-offs, the process of spinning-off the companies, questions regarding the growth of the spin-offs, the challenges and advantages that the companies had faced because they were a spin-off, and finally questions regarding the possible tensions between the parent firm and the spin-offs (See Appendix B for the initial interview guide). The semi-structured

interview approach allowed for an investigation of several potential research questions I was considering, and also gave both the participants and me the flexibility to discuss topics and insights that arose spontaneously throughout the course of the discussion. Open questions aided in encouraging the participants to share their opinions and views freely regarding the spin-off, the parent firm, and the processes involved. Toward the end of the interviews all the participants were asked if they had anything more to add, in order to make sure that issues the informants thought were relevant and important did not get overlooked. Following the interviews, the recordings were transcribed verbatim with the express aim of preserving the original intent of the conversations.

4.2.5 Secondary Data

A large quantity of secondary data was also collected for this study and consisted of public information in the form of the company websites, corporate press releases, LinkedIn profiles, government databases of company histories and individual ownership, and news articles published in the media. Both the research assistant and I collected this data to gain a more in-depth understanding of the cases, and confirm the information provided by the interview participants. Information that was not available in the English language was first translated into English and then analysed after. A PowerPoint presentation that was prepared on the topic of Established Firm's spin-offs and was created specifically for researchers at NHH by Informant 1 was also used in my analysis. Copious notes and memos were kept during the interviews and throughout the research, these were reviewed continuously during the data analysis. While the secondary data is not presented prominently in the 'Findings' section of this thesis, it does heavily inform the case presentations in the section on 'Research Setting', and was used to prepare for the interviews, to develop the interview guides, and to inform the 'Discussion' and 'Conclusion' sections.

4.3 Data Analysis

Clear guidelines for coding, constant comparison, theoretical sampling, and theoretical saturation were used to develop the theoretical explanations (Charmaz, 2003, 2011, 2014; Saunders et al., 2016). While the idea of the setting for this study came from within organizational ambidexterity research, the way in which the data was coded helped to ensure

the concepts that emerged were generated inductively from the data to support theoretical sensitivity (Saunders et al., 2016).

The data analysis is split into two principle stages: the initial data analysis and coding, which allowed me to locate the research question and subject of the study, and then the focused data analysis and coding, which allowed for an analytic and explanatory organization of the coded data (Charmaz, 2014).

4.3.1 Data Preparation

The audio recordings of the interviews were transcribed verbatim in their entirety. During the transcription process I was interested not only in what the participants said, but also in the way they responded. Notes were added for laughter, sarcasm, and similar conversational features to better convey the meaning of the responses. This additional contextual information ensured that important incidents that could affect the meaning of the data in the interviews would not be missed (Saunders et al., 2016). Secondary data was translated into English and transcribed into Word documents in the same format.

4.3.2 Initial Data Analysis and Coding

During the data collection process, analysis began early to help focus the data collection and assist with improving the interview guide (Charmaz, 2011). Notes and memos were also kept throughout data collection process to develop better conceptualization and to build theory (Charmaz, 2014; Saunders et al., 2016), and these notes and memos were often examined during the analyses. Additional memos regarding possible analytical directions were also developed during the transcription process. In this way, the data was distilled and initially analysed concurrently with the collection process (Charmaz, 2003). Because of a convergence of the answers and the presence of clear themes reported from the informants, the direction of the study and the research question was fully developed before the data collection was complete.

After the transcription of the interviews was complete, line-by-line coding was performed to help create an analytical skeleton. In qualitative studies, a code is often a short phrase that assigns a summary, pertinent meaning-capturing, or representative attribute for a portion of language of visual data (Saldana, 2015). Charmaz's (2014) guidelines for coding were

followed closely and the data was studied intently line-by-line and labelled by what each piece of information indicated for conceptual development. This initial coding process categorized the lines of data with names or sentences that summarized and accounted for each data line and were mostly short and always stuck close to the data (Charmaz, 2014). This coding process began the initial analytical accounting for the entirety of the data collected and was extremely helpful for conceptualizing the large quantity of information. This process was applied to both the primary and the secondary data.

<p>I2: [00:13:53] I think it's both. But i think it's also a management that allows resources to be spent without having them to be accounted for on the decimal. And now we are, as you know, owned by ██████ and ██████ is very keen on bringing the innovation culture from ██████ into ██████ and make more spin-offs in the B ██████ business and launch them for the world. But ██████ I think and I don't want to be... They don't have the same culture, because they are at the same time extremely keen on tracking all the resources that is being used. And in the short-term make sure that they pay off and driving efficiency very hard, reporting very hard. So it's kind of impossible to hide a guy with a good idea for four months just to kind of explore that idea and to make some code, because then he will fall for the reporting and efficiency demands. And when I say that to them I was in a digital board in ██████ and they were like I said very interested in this and told them that they had to make room for those kind of people. And then they tried to systemize that as well. So OK let's allocate you know a million euros to those people and that starts with identifying them, having them put up a five year plan for their idea, to have them report week by week on the progress. And let's make sure we finish it, stop it, within three weeks, if it doesn't show the progress that they had in their original plan and stuff like that. And it's very hard to get the results. I think what ██████ made especially in the 90s and early 2000 was because they had some slack in addition to the culture. So it was not a slack of taking Fridays off. It was slack in combination with real interest in the product using the weekends but being seen as a valuable resource in the company anyway. And that comes back to the leaders that they have to be interested in pursuing interesting possibilities with something else than spreadsheets.</p>	<p>Justin Harlan The money isn't monitored at ██████</p> <p>Justin Harlan ██████ would like to do what ██████</p> <p>Justin Harlan ██████'s accounting and ██████</p>
<p>I1: [00:17:31] The most easy to be... I was CFO for over 20 years. And the most easy decision was to say no. And a lot of CFOs normally say "No. That's not the strategy. That's outside." So, of course there are individuals who have to say "yes" and take a sort of personal risk, because I don't have my own money on this. I have my salary. Of course, I could be fired if I said yes to too much money that didn't bring anything in the end. But this slack ██████ is talking about, if I could turn it... In a way I think ██████ today has too much slack and the slack is that they have too much control over us. They shouldn't have so much control over us, because if you are employed as a controller,</p>	<p>Justin Harlan Too many CFOs are focused off ██████</p> <p>Justin Harlan CFOs should be more loose with ██████</p> <p>Justin Harlan ██████ has too much control ██████</p>

Figure 3: An example of the initial coding. The transcript is examined in the left column and a brief representative sentence of the content was assigned in the right column.

Before the next phase of focused data analysis began, the data was used to construct the individual case presentations of the companies involved; these are presented above in the 'Research Setting' section of this thesis to give the reader better context and background for the cases.

4.3.3 Focused Data Analysis and Coding

Charmaz's (2014) approach to focused coding was used to determine which of the initial codes would be used to develop the analytic and explanatory focus of the data. Using this approach was time-consuming, intensive, and reflective, but by following Charmaz's (2014) method closely, illustrative explanatory insights were gained.

After a thorough review of the data content, the conversation segments and initial codes were first color-coded into similar topics, and then the data was moved into a separate file and regrouped into categories that provided explanatory insights into the research question. After yet another lengthy review of the color-coded and reorganized data, the explanatory themes were located and the codes were regrouped again into three broad categories: *why Established Firm could do it*, *how Established Firm did it*, and *what Established Firm got*. Locating these themes allowed for a re-examination of the initial codes once more to determine where each code fit into this inductively generated thematic framework. Charmaz (2014) emphasizes that analysis is best developed from this constant comparison of codes to data, data to data, codes to codes, and back again, to develop higher levels of abstraction. At the end of this focused data analysis categories had been located within these themes and the data was organized with headers into explanatory segments that were discussing the same issues.

The screenshot displays a chat interface with a participant named Justin Harlan. The chat history shows several messages, each with a different background color. The colors correspond to thematic categories: pink for 'Separation of cultures. Autonomy', light blue for 'Autonomy', and light green for 'Employees. Support'. The messages are as follows:

- Justin Harlan (Pink):** So, and the other thing was setting a team there which was cross-functional, so we had a... so, even if people reported... some of the people, like [redacted] reported - and his team - to the technical department. We didn't care about that. We told them "You're [redacted]. And never mind the other thing, that's just where you get your salary from".
- Justin Harlan (Light Blue):** Okay. So, they reported to the technical department at [redacted]?
- I= (Light Blue):** Yeah, but not in everyday life.
- Justin Harlan (Light Blue):** So, we tried to build a culture of people, and work really hard together to pull in the same direction. In a company that was, at the time, full of politics and stuff. So, okay it was really important to kind of define a [redacted] culture and "this how we do things" and yeah... Create fun, and engagement. And really, we were going to war now on a really....
- R= (Light Blue):** So a lot of that existed in [redacted], and then it's kind of just been part of the [redacted]..
- I= (Light Blue):** Much of the same in [redacted] and now the exception in [redacted] we were even freer to do that.
- Justin Harlan (Light Blue):** So, kind of the seeds of [redacted] were already present and existent?
- I= (Light Blue):** [00:21:50] Yeah, because when [redacted] and I started [redacted] we took seven other people out of [redacted] that had worked in [redacted]. Some reporting to technical departments, like [redacted] the [redacted] department.
- R= (Light Blue):** And did you hire any extra people? Or was that the whole team?
- I= (Light Green):** In the very beginning that was the whole team, except for one guy that we had hired in from an external consultant company like, six months before we started. So, we asked him to join. So, he joined in as well. And then the first year we grew from nine to seventeen people, I think.
- Justin Harlan (Light Green):** Justin Harlan
Separation of cultures. Autonomy
- Justin Harlan (Light Green):** Justin Harlan May 10, 2018
Autonomy.
- Justin Harlan (Light Green):** Justin Harlan
Autonomy
- Justin Harlan (Light Green):** Justin Harlan
Separation of cultures. Autonomy
- Justin Harlan (Light Green):** Justin Harlan
Separation of cultures. Autonomy
- Justin Harlan (Light Green):** Justin Harlan
Employees. Support
- Justin Harlan (Light Green):** Justin Harlan
Employees. Support

Figure 4: Example of the data color-coded and in the process of being regrouped into categories and themes. During a significant reorganization of the data, the color blue was used for data relevant to the antecedents,

green for actions, and purple for the benefits of spinning-off. Where data was relevant for more than one theme it was placed in both groups.

A model was then constructed and this is presented at the beginning of the ‘Findings’ section (Figure 5) in order to give a clear overview of the findings. The model is particularly useful to help visualize the data, themes, and relationships.

In the final step of the analysis, the model and insights used in the ‘Research Setting’ and ‘Findings’ sections of this study are then related to the current management research in the ‘Theory’ section and the reviewed in the ‘Discussion’ section. The purpose of this was to see how my findings could be explained and how they contribute to the research that preceded this study. Each part of my model is checked for parallels in the literature.

4.4 Research Quality

In this section the overall quality of the research method is addressed by appraising the trustworthiness of the data and assessing the strengths and weakness of the methods used. The quality of research is most often determined by its validity and reliability (Saunders et al., 2016). Validity is usually determined by examining: the *construct validity* which is whether the intended variable is measured, the *internal validity* which is whether the research shows a causal relationship, and the *external validity* which is whether the results can be generalized (Saunders et al., 2016). *Reliability* addresses whether the outcomes of the study would be replicable if they were attempted by a different researcher (Saunders et al., 2016). However, many qualitative researchers view those determinants of research quality that were taken from quantitative research to be grounded in a different paradigmatic view and to not be applicable for qualitative inquiry (Denzin & Lincoln, 1994; Lincoln & Guba, 1985; Sinkovics, Penz, & Ghauri, 2008). Therefore, much qualitative research attempts to establish *trustworthiness* instead, through the measures of credibility, dependability, transferability, and confirmability (Lincoln & Guba, 1985; Sinkovics et al., 2008). These concepts of trustworthiness correspond to validity and reliability in many ways but are more appropriate for the case study approach used in this study.

Lincoln and Guba (1985) explain how in qualitative studies such as this one, *credibility* replaces internal validity to assess how plausible the findings are. *Transferability* parallels external validity to show how applicable the findings are to other contexts. *Dependability* is

used instead of reliability to determine if the results would be likely to occur at other times. And lastly, *confirmability* replaces objectivity to determine if the researcher's views have intruded in the results. I found that these criteria for trustworthiness were more fitting for judging the quality of this research.

4.4.1 Credibility

Credibility assesses whether the researcher's account of the study can be viewed as reliable and plausible. Credibility can be aided by ensuring that the research was conducted properly, and that the findings are reviewed by the participants to confirm their interpretations (Guba, 1981). In a process called *member validation*, the findings were sent back to the interview participants to see if the analysis accurately portrayed the insights of the participants and the events they experienced. The findings were then amended after the participants reviewed them. The open nature of the original interviews also allowed questions to be reworded and asked again to assist comprehension if the meaning was unclear to the participants.

Multiple data sources were used in a process called *triangulation*, in order to establish further credibility to the research (Guba, 1981). Primary interview data from multiple participants was combined with the large variety of secondary data. The secondary data was reviewed early in the data collection process to ensure referential adequacy during the interviews. All of the interview participants also held different top positions at several of the firms under examination in this research, providing a multitude of perspectives on the same firms and events. Patterns and themes were searched for during the analysis and interpretations were formulated based on multiple accounts. No category or theme was accepted that could not be verified from at least two sources. The findings relied on corroboration and coherence such that each conclusion was compared and contrasted with all the other material to be certain that there were no internal contradictions. A variety of theories were also examined and discussed during the literature review in order to ensure a thorough search for explanations (Guba, 1981).

Continuous dialogue with the supervisor of this thesis in the form of meetings, and her participation in the data collection process allowed for peer debriefing. The findings were also presented twice to faculty members and professors at a FOCUS program event and exposed to valuable criticism and review which was later incorporated into the thesis.

It could be considered a weakness that this study reviewed the events and histories of the firms retrospectively. Participants may not have remembered things well or the same after so much time. Informants may forget important information or confuse the order of events and the time they took place. Yet, the information provided by the participants may also have been more coherent and reflected upon, as they had experienced ample time to contemplate and consider the spin-off and innovation process in hindsight and provide information regarding outcomes.

4.4.2 Transferability

The study was largely inductive, exploratory, and the sampling was theoretical, so it was not intended to be representative or typical but was instead intended to maximize the range of the information uncovered. Participants had been recommended for the study by a contact at the firm familiar with the spin-offs and an additional informant was located during the interviews on the recommendation of multiple participants.

When performing a qualitative case study, such as the one here, generalizations of the findings are typically eschewed on the basis that the interpretations of the events are tied to their context (Guba, 1981). The interpretations in this study are presented in conjunction with the 'Research Setting' section in order to convey as vivid a description of the context as possible. This should aid other researchers in comparing the information to other possible contexts in which transfer might be contemplated and allow them to assess the degree of fittingness.

4.4.3 Dependability

To assist a study with dependability, researchers can establish an audit trail that makes it possible for the reader to examine the processes whereby the data was collected and analyzed and how the interpretation were made (Guba, 1981). This thesis documents all the phases of the research process.

My supervisor as well FOCUS program presentations assessed the procedures and gave critical feedback regarding the degree to which the theoretical interpretations are appropriate, in a process of "peer audit" (Guba, 1981). The codes and findings were also discovered inductively from the data.

4.4.4 Confirmability

Confirmability was aided by a deliberate mindfulness to not allow personal values or theoretical inclinations to affect the performance of the research process. A singular and clear research design and approach is used and followed closely (Charmaz, 2003, 2011, 2014). My supervisor aided in the interview process, data collection, and advised the research closely. The methods and the processes performed in this study are transparent and comprehensively described to assist repetition in future studies. In addition, all the findings are supported by direct quotes from multiple participants.

It may be possible that interview participants could have withheld information if they did not trust the interviewers or the confidentiality of the process. However, all the participants signed a consent form drafted by the FOCUS research program (see Appendix A). The consent form explained the FOCUS program, how the data was to be used, an explanation that the data would only be viewed within the FOCUS program, and that the data would be anonymized. Because the participants also recommended a key informant to be interviewed, it is likely that trust was established.

4.4.5 Ethical Considerations

Research ethics were considered throughout the research process due to their potentially significant impact on research quality (Saunders et al., 2016). The participants were given information on the process in advance and had the option to withdraw their participation at any time. To protect the participants in this research, the data has been anonymized and all the personal names, corporate names, dates, and locations have been removed or replaced with pseudonyms. Precautions have been taken in the storage of data, analysis, and the presentation of the research to ensure that identities are not revealed. All the data has been stored and encrypted on a personal computer, and after the completion of the thesis will be deleted from the personal computer and delivered to the FOCUS program.

5. Findings

This section presents the in-depth analysis and findings of the research. The findings are organized and presented with the interpretations accompanied by illustrative quotes. A summary and a model of the findings are presented first to help the reader follow the analysis, then the findings are explained.

5.1 Summary

Based on the analysis of the interviews and the secondary data it appears that there were three main antecedents at the parent company that were present for both the development of innovations within Established Firm as well as the decision to spin-off these innovative solutions into separate companies. These antecedents were the culture of innovation, organizational slack, and the involvement of a key decision maker. The parent company assisted their innovations and spin-off companies with both support and autonomy. Support took the form of assistance in financing, hiring, a showroom, and their network. By using the spin-off mode to manage their innovation needs, the parent firm gained two distinct benefits: cost-savings and financial gain, and quality improvements. Established Firm could have kept its innovations in-house or pursued them through joint-ventures or acquisitions, but the benefits shown here may be unique to the spin-off mode. The antecedents section below also includes an additional section on how the antecedents have been changed in the recent period at Established Firm, and what effect the informants believe this may have on their ability to pursue innovations and create spin-offs in the future

The findings are both shown in the model below as well as demonstrated with illustrative quotes in this section of the thesis. All of the findings are supported by quotes from multiple informants; however, the attribution of which informants were providing each specific quote were later removed at the request of the participants to provide greater anonymity.

5.2 Model

This model is presented in order to give a clear overview of the many findings covered in this section of the study. The model is particularly useful to help visualize the data, themes,

and relationships, and was developed to give an answer to the research question regarding *how an established firm can develop technology spin-offs to meet their innovation needs.*

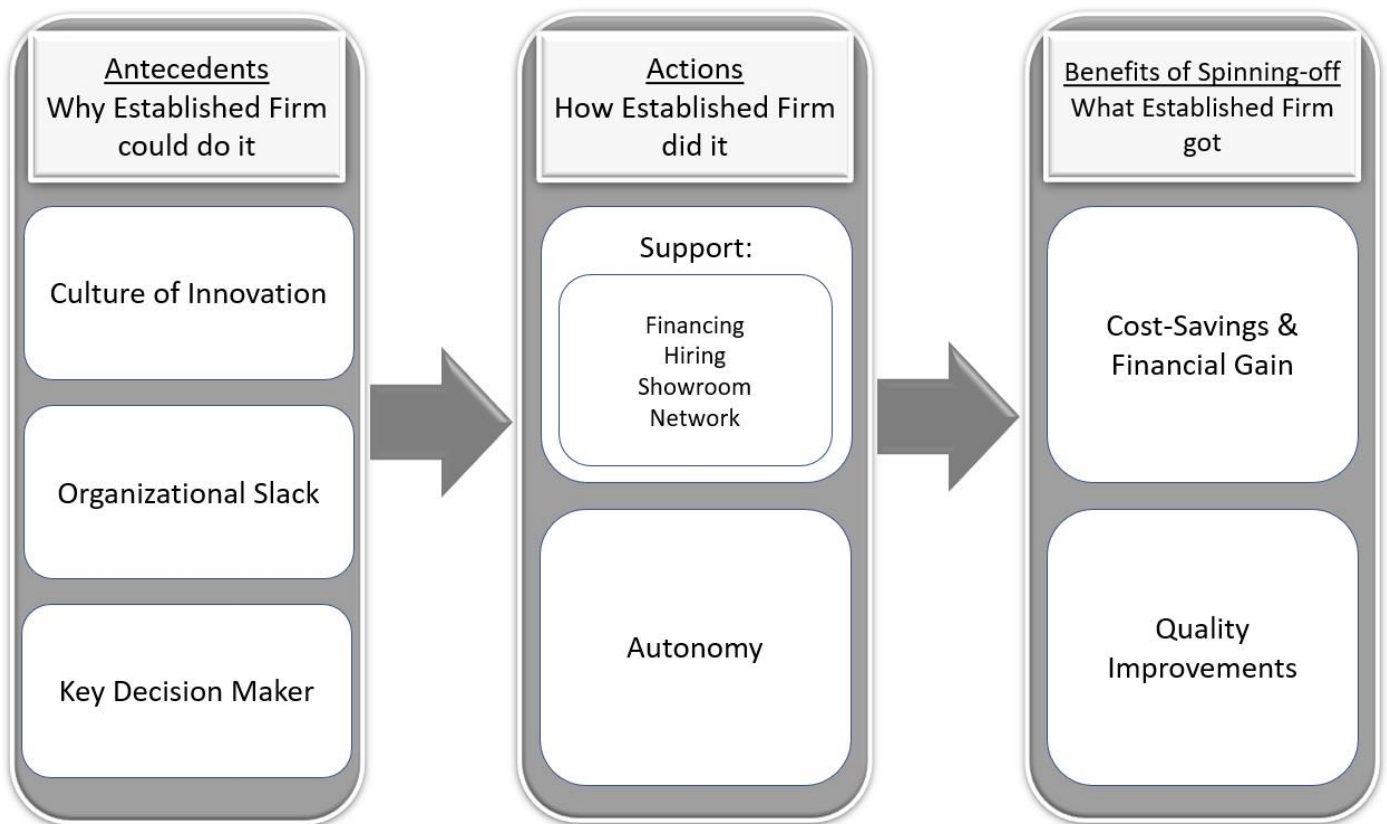


Figure 5: Model of the analysis and findings.

5.3 Antecedents: Why Established Firm could do it

During data collection and analysis, it became apparent that there were conditions within Established Firm that fostered a culture of innovation and stimulated the pursuit of the spin-off mode within the parent company. The conditions within Established Firm that were discussed and arose from the data are outlined here to give better context for how the innovative spin-offs were generated.

5.3.1 A Culture of Innovation

When asked where their innovation and spin-off strategy had come from, the executives of Established Firm pointed to the founding of the firm itself. As mentioned earlier in the ‘Research Setting’ section of this research, at the start of the company Established Firm was challenging an incumbent firm that had long held a monopoly in their industry. Established

Firm had a short amount of time to bring their product to market, very little experience, and no legacy. This established an initial culture of innovation amongst the employees that was continued and maintained beyond the founding of the firm.

I think that comes from the start that [Established Firm] as an organization was bringing together a lot of people who never had made TV before. We started with 142 people... but about 10 people, maybe 15, were from [the competitor]. So, we were a lot of people who didn't know how to do it.

And we were in a challenger position, which drives innovation.

Established Firm had a short period of time to set up their company and launch their product, but this challenge necessitated a culture of employees willing to attempt creative solutions. With the entire company being new employees and no previous industry experience, the initial culture was established to generate creative solutions.

We had very little time... It was a rough period of bringing people into the company. They were coming with other ideas, ways of doing things. I think that's what brought [Established Firm] where we are. There was an open philosophy for bringing in new things because you didn't know, you didn't have any legacy.

And, we kept that culture after the first year as well.

It is important to note that this culture of innovation was maintained for two decades after the founding of the firm. This was not a conscious strategy, but rather something that arose from the needs of the firm.

I would say that in the 90s, in the start, we didn't have a strategy. It just happened... But that was a sort of an occasional strategy. It just happened when it happened. And again, the persons around it, the necessary deciders were open-minded enough to say yes.

After Established Firm did become a large and established player in their market, they continued to remain innovative. The innovations that were explored were not proposed from the top by the management, but in every case came from lower in the organization as a creative proposal to use technology to improve the way they provided their product. Established Firm's managers were opportunistic and capitalized on these proposals.

The spin-offs were coming from the inside. So, these are companies that are close to the business in some way.

[They] all started I think because people saw a need for something in what they wanted to achieve in [Established Firm]. And then saw, “okay, this could be relevant for others”. [It was] not very much a top down strategic thing from [Established Firm], like “let’s do this”, it’s more like “okay. Now we have that”.

This was a culture of innovation that originated from the challenges of the firm’s beginnings and persisted as the firm grew, even though the conditions that first generated it were now very different. The next two antecedents are related to the nature of this culture and how it was maintained.

5.3.2 Organizational Slack

A key antecedent within Established Firm that the informants reported was important for the development of their innovations was how the organizational form and finances were handled. The company was more focused on the overall success of the firm, rather than pushing for efficiency in every unit. By not pushing for strict unit profitability, there was ample slack and space for creative exploration.

I think the most important thing is this, that you are willing to use a little money on something, and I think in many organizations you are so much following the organization chart and pushing each unit for maximum profit. And then it is very difficult to get a certain distance manager to use a little money on things that may not have anything come out of them. Right? But this willingness in [Established Firm] to use a little money on it, it’s of course also the organization form of [Established Firm], because it’s functionally organized. There’s nobody really in the organization to push for making maximum profit on small things.

[Established Firm] in the first 10-15 years had very little bureaucracy. When we started, I was CFO, I had one controller. For many years we were only 2-3 persons on the economy department.

Because Established Firm was not strict about the unit profitability in every aspect of their operations, they were willing to give financing and support to innovation projects. Employees were allowed to work on side projects that were not related to their core

responsibilities. The employees working on the innovations were also coming in to work on the weekends, which shows that they had a sense of ownership in their project.

I think it's also a management that allows resources to be spent without having them be accounted for on the decimal, as long as the initial idea is accepted and the people working on it are skilled, motivated, and trustworthy. I think the innovations that [Established Firm] made especially in the 90s and early 2000s was because they had some slack in addition to the culture. It was not a slack of taking Fridays off; it was slack in combination with a real interest in the product, using the weekends, but being seen as a valuable resource in the company anyway. And that comes back to the leaders, that they have to be interested in pursuing interesting possibilities with something other than spreadsheets.

They use a lot of their own time too. For instance, [Control Room Inc] was a company started from one individual, who on his free time started to just look for other solutions and then he came to [a manager] and he gave him that sort of freedom, "come in every second day and you can work only with this project" or "you can have some time. Three months. Inform me of how it goes. I will talk with the CFO and see if that's okay."

I think what is number one in importance at [Established Firm] is that there has been a willingness to use a little bit of money to let somebody do something creative. Something new. It does not mean that somebody has sat in the boardroom and says "let's put 200 million [kroner] on the line" or something like that and develop something big. It is more that somebody is willing to say "let this guy or this little team of two or three people work with this, because it may be an interesting thing".

Later below, I will highlight the support and autonomy that was given to innovation before and after the creation of the spin-offs, but it is important to note that much of the conversation regarding support and autonomy was often connected to this discussion regarding organizational slack.

5.3.3 Key Decision Maker

During the interviews and the initial emails with the informants, I was explicitly informed multiple times that there was a key decision maker at the firm who was involved in all of the

spin-off companies and their creation. He was added to the sample and are *Informant 1* in this research. Informants continually emphasized the importance of Informant 1 to the innovation and spin-off decisions.

Have you interviewed [Informant 1]? Because he is kind of the main man behind all of this... I went to him and asked "Can we start a separate company?" ... He was CFO all the way until a few years ago. He is the only one who had ever survived within [Established Firm] chief-level from [the founding] until last year... I'm not sure if all of this would have been without him in fact.

Because Informant 1 had been with the company since the initial challenging period when the company was founded, he carried that culture of innovation that flourished at the beginning forward throughout his tenure. Informant 1 represented a continuity of strategy and approach for more than two decades. Informant 1 was in charge of the financial approach that generated the organizational slack, he was on the boards of many of the spin-offs, and Informant 1 was also the executive that innovators asked when they wanted to create a spin-off. Informant 1 selected which among the innovations that employees proposed would get support from the parent company.

I was CFO for over 20 years. And the easiest decision was to say "no". And a lot of CFOs normally say "No. That's not the strategy. That's outside" ... So, it was an organization and a culture which didn't stop everything.

While Informant 1 made the decisions about what innovations would be pursued, they did not just chase every opportunity that was proposed. There were some clear criteria for what type of innovations the parent firm was interested in supporting.

I would say all these companies come sort of out of necessity in [Established Firm] ... that we needed something new and we needed something that we didn't find in the market as a ready solution.

While there was not a top-down strategy to pursue innovations, the innovation proposals were supported and allowed if there was both a genuine need for the solution, and the innovation was something that was not readily available in the market. Established Firm was not interested in developing something they could just buy.

I think it's a dangerous part of this, that you think you can always develop something which is better than the market. I also had a philosophy that [Established Firm] should do it a simple way. We are just the same company as any other... you need to have something which is changing the way of doing things, totally. It must be quite innovative... So, you have to be quite sure that you're not going to say we are so clever in this company. So, everything we are doing we can do a lot of, and then we can spin it off, and then we can be deliverers.

5.3.4 Changing Antecedent Conditions

To add support for the influence of the antecedents illustrated above, this section shows how there is now uncertainty regarding the ability of Established Firm to continue to innovate through the spin-off mode in the future due to a significant change in conditions at the firm.

As detailed in the 'Research Setting' section of this study, Established Firm's ownership changed in t6 (Figure 1) from being owned by several large companies to now being 100 percent owned by a single firm. This change in ownership has altered the way the finances are viewed, the culture, and the relationships that Established Firm has with its spin-offs.

Then [Established Firm] gets in, [and] kind of becomes the middleman between [Owner Co] who actually decides whether we should fuel the company and how much. So, it is kind of interesting. In the first years, we were very protected from [Owner Co] and its corporate world. They have become much more proactive owners.

We also experience that the time in [Established Firm] for the last two years have been very strict. So there hasn't been much room for being a partner with the daughter companies as such.

Lending support for the relevance of the antecedents mentioned above, the informants reported that conditions have begun to change and this has caused some scepticism amongst the informants about Established Firm's ability to continue the spin-off strategy into the future. Even though Owner Co appears to be very interested in supporting and pursuing innovation in the spin-off mode, there is apprehension regarding their ability to accomplish it. Owner Co does not have the organizational slack that Established Firm maintained for such a long time. There is an emphasis on efficiency and reporting that was not present in

Established Firm, so it difficult to give creative employees the time and support they need to develop their innovations.

I think culture is very important. And even if the CEO of [Owner Co], every time he speaks, he speaks about innovation. I think he means what he says too. But this big pyramid has handbrakes all over.

And now we are, as you know, owned by [Owner Co], and [Owner Co] is very keen on bringing the innovation culture from [Established Firm] into [Owner Co] and make more spin-offs in the [Owner Co] business and launch them for the world. But [Owner Co] I think that within a conglomerate, and along with the control and reporting that is necessary to control a large conglomerate, it is hard to achieve the same innovating culture. A conglomerate can lose some of the innovating culture while tracking all the resources that are being used. And in the short-term making sure that they pay off and drive efficiency very hard and reporting very hard. So, it's kind of impossible to hide a guy with a good idea for four months to just explore that idea and make some code, because then he will fall [on] the reporting and efficiency demands.

In a way I think [Owner Co] has... too much control over us. They shouldn't have so much control over us, because if you are employed as a controller, you have to do your work. And what is your work as a controller? It is to say no. It is to ask questions. It is to have reports because another guy beyond me should have a new report. That's too much control over us. [At] the [Owner Co offices], the whole building is full of controllers... In a way their nature is to ask questions and to have everything in spreadsheets. You don't have an innovation and spin-off in spreadsheets. That's in the individual's heads.

Owner Co's focus on efficiency and unit profitability stifles the organizational slack and culture of innovation that previously allowed innovations to be pursued within Established Firm. Informants stated that it was likely that Owner Co would pursue innovation through the acquisition mode in the future.

I think [Owner Co], have to innovate more through investments. That a conglomerate can do well. They can address the most attractive companies, pay 100 million kroner, apply efficiency, pull innovation, and show profit on that. And I think that's the way

they will innovate, if that is innovation. I guess from a conglomerate of companies that could be said as being innovation. But, having a lot of people making their own new products, that become global successes out of [Owner Co]'s everyday business? I think that is harder from a conglomerate position.

Not all of the recent changes in the antecedents are solely due to the change in ownership. Another big change has been that the key decision maker mentioned above, Informant 1, while still on the board of several spin-offs, has retired from his position as CFO of Established Firm. Informant 1 was clearly an important decision maker in allowing the development of the innovations and launching the spin-offs, and it is unclear if Established Firm will continue to pursue innovation through spin-off after his departure.

[jokingly]: *[Informant 1] is retiring so then the innovation might fall [laughter].*

I hope there are still good ideas which are coming out the same way as earlier, that we will still have room for being companies and commercialized. But we were asked very early in the conversation about individuals, some personalities. Of course, there are very important tasks, that there are persons who are willing to take a sort of risk speaking up and acting and saying "this we should go for". Hopefully my retirement is not the end of that adventure.

I think there will be a bit more weight on the investment part. We started [Established Firm] Invest in [t3], and by [t5]-[t6] we had invested in 35 companies, but it's small companies. It's financially okay, but it's not the global success that we saw from the spin-offs.

When asked if the ability to create spin-offs was institutionalized within Established Firm, and whether it would be continued, there was further scepticism, and again the acquisition mode was mentioned.

I'm not sure if the process on how to do it, if new people are thinking the same way. New people might think that maybe we buy a company outside, or maybe we put a lot of money on something and so on. Instead of starting small and controlled.

5.4 Actions: How Established Firm did it

To provide more detailed insights into the research question, the relationship of Established Firm to the spin-offs was explored. Informant responses regarding parent firm's strategies that helped the spin-offs fit into two major themes, those of support and those of autonomy. This section explores the strategies that the parent firm used in their relations with the spin-offs.

5.4.1 Support

Informants were mostly very positive about the support Established Firm gives to the spin-offs and viewed this as a something that aided both the in-house innovation development and also the spin-off company.

I must say the general support from people working in [Established Firm] is great.

Support from Established Firm to their spin-offs came in several different ways. I overview discussions related to finances, hiring, using the parent firm as a showroom, and synergies with their network.

The other advantage is that you have kind of quick access to finance. And then you have a demanding customer in the face, you have a showroom, and then you have relations with other broadcasters in Scandinavia.

It is important to note that, as mentioned by the informants above, these were not so much deliberate strategies of Established Firm, but rather a willingness to say yes to proposals from innovators.

Financing

Because of the organizational slack mentioned above and a very supportive CFO, money was made available both for employees within the parent company to create the innovative technology that would later be spun-off into a new company, as well money to explore product creation for new spin-off companies that had not yet discovered their technological solution.

That you're in [Established Firm], and when they see an interesting idea or concept they're willing to put a little money on it. That means that some people are allowed to

work with it, without anyone recognizing almost, and develop the concept and test it internally, and then just spin it out as a company. So, both the money to let people experiment and the money to start a company.

As mentioned above, Established Firm would support the development of innovative technology if there was need for a solution and it did not already exist in the market; however, there were limits to the amount of money they were willing to put into a project in the early stages. Large amounts of money were not spent all at once, but smaller amounts were given and then if the firm needed more they would have to justify it to the board at each new funding stage.

And it has been run more or less, for the first five years at least, by “Okay, don’t spend all the money”. The one million dollars. It’s like, “don’t spend it all on ice cream” ... and see what you can do.

You should also know that [Established Firm] has never put a lot of money into a start-up and [never] given: “here is 20 million [dollars]. Do something.” [Instead,] we have started this strategy: stone-by-stone. Of, course some of the companies we have had to put more into both money and time than we saw at the start.

This *stone-by-stone* approach was present in the development of all the firms. They were given a fixed amount of money at the beginning and they had to return to the board and be reassessed if they needed more.

Hiring

Established Firm also supports these spin-offs when they leave the parent company by allowing them to take key employees with them.

Without there being any strategy behind it, I think it has been a culture of motivating and letting people leave for spin-offs.

This is a significant advantage for the spin-offs because these employees have already proven their value at Established Firm, know the products and industry, and already have good working relationships with the members of the spin-off firms. At the beginning of all of the spin-offs the employees hired out of Established Firm made up the vast majority of their total staff.

When [name] and I started [Internet Inc], we took seven other people out of [Established Firm] that had worked in [the subunit]. Some reporting to technical departments... In the beginning that was the whole team, except for one guy that we had hired from an external consultant company like, six months before we started... So, since we began the start-up we have pulled an additional four or five people, and we have had loads more interview here.

You will also have access to people... I think half of the 24 [employees] in [Control Room Inc] [come from Established Firm].

In one instance Established Firm also allowed a spin-off to simply borrow employees from them to train a spin-off customer in a different country on how to use their products.

We also actually borrowed people from [Established Firm], that we sent to [country name] to train people there. So, people working on our tools in [Established Firm] became key members of their staff and they began training them and running operations for them in the beginning.

Showroom

Established Firm allows all of the spin-offs to bring their potential customers to Established Firm's offices to see the products operating in a real work setting. This is common in their industry and had to be done for most of the spin-offs to gain their large international customers.

And a lot of smart people and innovators have good ideas out in the market, but they don't have a live showroom. And of course, you come much faster to the market if you have one industry, one organization who is using your product. That's fair and obvious... If all these companies were started like normal companies... I think they would have had a much longer way to the market, and a much longer way to earn money, and a much more difficult situation.

When I talk about reference, I mean that we put in the literature on the web page or on the exhibition stand that Established Firm is a customer. When it's a showroom, it's kind of the next stage where they say "is there anywhere I can travel to have a look at it?" ... where you can take the international customers and show them that this really works.

Having a large client like Established Firm using their products at the earliest stages is a huge advantage at the start of the spin-off. This allows them to secure their initial group of clients and to see rapid early growth. Large companies in this industry are often unwilling to take the risk of purchasing these new innovative products unless they can witness them actually working onsite in a major media company.

Network

Because Established Firm has several innovation spin-offs, that are all born from the same company and working in the same industry, this has created synergies and network benefits for the spin-offs. The spin-offs also have had their offices all very close to each other and many are located in a large media cluster supported by Established Firm. The creation of this now large media cluster the spin-offs are collocated at was prompted partly by the spin-off process at Established Firm and supported by government agencies. Because they all have very different products, but all servicing the same industry, there is a potential for the spin-offs to service each other's clients, so they often recommend one another to clients and do marketing together. The spin-offs will also seek advice from each other if they are doing something new that another spin-off has experience in.

If you are on the board in the company from [city name], [Established Firm] originated, and at the same time on another board, it's very easy and natural to suggest that why don't we use this company.

We do exchange leads. We take them under our wing on exhibitions and stuff, so they coexhibit with us. And we discuss like, how the hell do you set up legal towards the US? Yeah there are a lot of things to learn from each other like that.

I know at the exhibition we will exhibit the [Robots Inc] trolley system at [Graphics Inc] main stand, as the main event. To show that a nice trolley system like this can work with [Graphics Inc].

There are also product synergies beginning to happen between the spin-offs, where Robots Inc is using Control Room Inc's and Graphics Inc's systems to control its products and add features.

It's two interfaces. You have [Control Room Inc] which is automation, and then you have [Robots Inc] which is robots. And this tells it where to go. And [Robots Inc] tell

them where precisely. And then [Graphics Inc] generate this graphic in the room, seen from the perspective of the camera.

When informants at Established Firm were asked if they have done anything to encourage synergies between the spin-offs, they said that they had considered integrating them, but decided against it because it was not necessary and they feared they could disrupt their ongoing success.

We have thought about “should we do this in a bigger umbrella?” Put everyone in all the companies in one umbrella with one CEO on the top, so we can have more synergies and more integration. But we haven’t done that... What we have learned is that as a single company they had been able to make success. So why change the winning formula?

5.4.2 Autonomy

Established Firm also gave the spin-offs a significant amount of distance and autonomy both after the spin-off, as well as during the innovation development within the parent firm prior to the spin-off.

You have to make sure that the spin-off has a distance from the mother company so that they are not called into the bureaucracy, the processes, and the reporting.

Employees interested in working on a technological innovation for a problem in Established Firm are given significant time to just work on their project without interference.

In the case of [Control Room Inc] it was then my co-founder... was allowed to sit for almost four years, and for most of the time program the [Control Room Inc] software.

Established Firm did not direct the spin-offs in their strategies or intervene in their operations, but rather set some simple guidelines for them and then let them loose in the market.

[Established Firm] has been more passive than setting the direction. The board has been more passive, than I guess, could be normal. Not that they haven’t challenged us. More that they are giving direction.

We in [the subunit] became more or less a separate entity in [Established Firm]. So, we were some levels out. The CEO of [Established Firm] didn't intervene much in what we did in [the subunit] ... all he needed was that we delivered the agreed... not so much revenue, but like we agreed "do we create a profit or not? And how is that?" Within that framework we [were told] more or less just "Go do". Which was great.

The spin-offs were given autonomy and Established Firm interacted with them through the Board of Directors who participated by giving advice, expertise, and direction.

5.5 Benefits of Spinning-off: What Established Firm got

By using the spin-off mode to innovate rather than achieving their innovation through acquisitions or keeping the technology inside the firm, Established Firm was able to realize a lowering of their costs for the technology, a financial gain, as well as an improvement in the quality of the products they were getting from their spin-off companies. It is unclear if these benefits could have been achieved in a different mode such as acquisitions or internal separation, but it is likely that these benefits are altogether unique to the spin-off mode.

5.5.1 Cost-Savings and Financial Gain

Nearly all of the innovations that the spin-offs created saved costs at Established Firm by improving task and labour efficiency; however, Established Firm also got to recoup their development costs by selling the technology solutions to other firms, and even turned many of them into a source of income. Selling the innovations in the spin-off mode meant that the other firms in Established Firm's industry would pay for the research and development of solutions that Established Firm needed. This turned a necessary cost into a potential revenue source.

I remember early in [Graphics Inc], one of the issues was that what today is the cost line for doing the graphics... if that costs 5 million [kroner] every year to do. If we can earn money on the software from other customers we would have our own production for free! Here the customers are buying or paying for us on another line in the accounts. 5 million [kroner] in cost for having graphics is now also 5 million [kroner] on the income line. So that was the thinking, that it will reduce the costs for [Established Firm]. Because all the development we had to do. We had to do it. All

the others do it their way and we did it our own way, but if they would pay for our cost of doing things. Why not? Why not make money on that?

And of course, we get something back, because it's expensive to make a system with all the necessary features for one company. We could have had development departments as far as you could see. So, by doing this, we make 50 customers put their R&D money together with us and make a good product that we can enjoy.

Established Firm also earned substantial financial gains when they exited or sold off parts of their spin-off firms.

5.5.2 Quality Improvements

By using the spin-off mode to innovate, Established Firm also benefitted from significant quality improvements to the products and services they were getting back from the spin-off companies. The innovations were first developed and built specifically for Established Firm's needs, but as the spin-offs gained more customers the products improved due to the increased funding and the new customers' demands on the products.

Of course, there is a great value, that everything an international customer needs is brought into the product, and the same product is delivered to [Established Firm]. So, that's sort of the production development which is brought from all the international customers. [This] gives some benefits for [Established Firm].

Established Firm benefitted as the capabilities and functions of the products improved from the demands of the other spin-off customers. The spin-offs both provided more services and products, and also became more efficient as they grew and scaled up their operations.

When we started, we knew we had something to offer, but we were not professionals at doing what we are now, like running a software and service company. That was not our experience. So, things changed both because we learned, but also because we were bringing in people with knowledge.

We were very customer focused, kind of first selling it and then developing what was required. So, kind of modularity in the software and so on, we did it as we sold it. So, it is still only one [Control Room Inc]. It's not one software for [Established Firm]

and another for [competitor firm] and so on, but it's a lot of configuration which is in the software to tell it to behave.

The spin-offs are also capitalizing on their strong culture of technological innovation and experience by doing their own innovation initiatives and exploring new products as they grow into larger companies. By growing into a larger and more capable separate firm, the spin-offs are able to support their own innovation projects within their companies and provide these products back to the parent company.

We have tried two people with ideas, like "okay, here is half a million go do it, let's see what you get out of it" ... and then we have also had product ideas coming from very top-management... So now, we have one product that is working almost as a business inside the business... So, that's interesting and an interesting way to see if that will fuel better creative ways of getting products out, because we are now at the size where you can say, we can be the anchor of getting new things.

6. Discussion

This section presents the analytical discussion of the findings in relation to existing literature. Here, I draw on my empirical analysis to discuss how an established firm can secure technology-based innovation through a corporate spin-off. I also show where the findings support current organizational ambidexterity literature and I outline the most compelling findings that provide new insights, clarify, or contradict the existing literature related to the setting.

This thesis is an examination of how the corporate spin-off strategy relates to an established firm's innovation pursuits. A single large established firm is examined along with four of its innovation spin-off companies. Several interesting findings regarding the research question of *how an established firm secures technology-based innovation through a corporate spin-off* were found and are worth highlighting.

First, the findings support the arguments in the literature that a decentralized structure, and a culture with flexible and supportive leaders and managers are antecedents to ambidexterity (e.g. Tushman & O'Reilly, 1996). Maintaining elements of the innovative culture that the parent firm had at its founding was critical for the generation of innovation opportunities to be identified and pursued, even when the company was a much larger business that no longer resembled its earlier self. My findings also support the literature on resource slack as a conducive condition to ambidexterity inside an established firm, with informants using precisely this terminology in the interviews. The relationship of slack to managerial discretion is also evident in my findings, as the key decision maker was the CFO and organized the structure of the company in such a way as to ensure that there was sufficient slack for innovation opportunities to be identified and developed. As Burgelman (1983) and other literature (e.g. Clarysse et al., 2011) suggested, frontline middle managers at Established Firm more easily identified innovation opportunities, while top-management allowed innovations to be developed and gave them policy support and start-up capital. The findings in this thesis also support the relevance of these antecedents by showing that after conditions changed at Established Firm, when Owner Co took full ownership and the supportive key decision maker left, the informants expressed scepticism regarding the firm's ability to develop innovations internally or spin-out solutions in the future.

Additionally, this study supports studies outside of organizational ambidexterity literature and in the spin-off literature by showing that access to employees, technology, financing, and the parent company's network all support the spin-off both before and after they leave the parent company (Ferriani et al., 2012). The development of a large cluster in relation to the spin-off process at Established Firm, as well as the observed synergies between these firms supports the findings of research investigating technology clusters that discusses spin-offs.

This study also supports the recommendations in organizational ambidexterity literature that exploration should take place in autonomous units (e.g. Burgers & Jansen 2008; O'Reilly & Tushman, 2004). Although two of the spin-offs, Internet Inc and Control Room Inc, developed their innovations inside of Established Firm, and Software Inc and Robots Inc developed their innovations in their spin-offs, both their processes of exploration and exploitation were aided by intentional autonomy from the parent company.

The findings of this study also provide new insights into how firms can secure and manage innovation through the corporate spin-off mode. The case studied here is particularly informative for organizational ambidexterity research and shows how an examination of the spin-off mode can contribute to approaches to the ambidexterity solution in several different ways. For instance, the success of the exploration units and overall ambidexterity at the parent was achieved through a variety of approaches; for instance, Established Firm was able to accomplish early exploration and innovation for Control Room Inc through a process of contextual ambidexterity inside the firm, while the innovations at Internet Inc were actualized over the course of a decade in a separate division inside the firm in a process of structural ambidexterity; in contrast, Software Inc's and Robots Inc's exploration occurred externally in the spin-off companies. I am unable to assess which of these approaches to exploration is superior because they were all successful, however both Software Inc and Robots Inc were perceived by the informants as struggling during their exploration process until they had achieved their innovation and could begin to exploit their products. It is likely that exploration performed inside of a parent firm has some advantage over exploration done inside of a spin-off, because it is unburdened with the responsibilities and difficulties of running a new company that does not have a finished product. Also, innovations under development inside the firm are shielded from scrutiny of their slow development speed, because they are less visible and do not have a board of directors observing them while they are struggling to create their innovations.

Yet, all of the spin-off firms were able to exploit their innovations after they were spun-off. And the spin-off approach appears to be a very advantageous way for a parent firm to manage their innovations once they have a working product. It is likely that the cost-saving benefits and financial gain of selling the innovation to other firms and recouping the development costs of the innovations could only have been achieved through the corporate spin-off mode, rather than by the other ambidexterity approaches offered by current research. As indicated by the informant at Control Room Inc, customers were not willing to purchase the products unless they were separated from the parent firm, because they feared that the established firm would get priority over them and they did not want to work so closely with a competitor. Spinning-off innovations allows the parent firm to create profit-focused enterprises with their own specialized marketing divisions that better target clients that do not resemble the parent firm's customer base. While the parent firm and the spin-offs were certainly familiar with the needs and industry of these customers, the parent firm had no experience selling to them, so there was an inherent logic in creating separate companies to market these innovations.

Parent firms can recover the cost of their research and development and create a profit from their innovations by spinning them off as separate businesses. As the informants in this thesis acknowledged, the other media companies were now paying for the innovations and they shifted from being a cost to a source of revenue. In industries such as this one, where companies do not actually compete directly with each other for customers due to national and language barriers, the downside of other large media firms outside of parent firm's country getting access to their innovations is very limited, and selling internal innovations becomes an attractive strategy.

The informants at Established Firm made it clear that they would only use the products their innovators created if they were superior and more cost-effective than what they could purchase on the open market. Spin-offs have to compete in the global market and this can result in their operations, their products, and their services being improved by the increasing demands of their new customers. In this case study, all of the improvements that the spin-offs made to their products came back to the parent firm as benefits. Spin-off companies are able to take the knowledge and improvements they gain from servicing foreign firms and integrate this into the product they provide their parent company. Several of the firms, like Internet Inc and Robots Inc also are clearly becoming ambidextrous organizations themselves and have their own internal exploration initiatives to develop new products that

Established Firm will benefit from in the future. Therefore, the spin-off mode has the potential to turn innovation initiatives into autonomous ambidextrous units outside of the parent firm.

This case study shows that an established firm is able to achieve an extreme degree of separation of its innovation units from its regular operations by spinning them off; however, because the innovations are products that fulfil the parent firm's operational needs and are incorporated into its work processes, the benefits are seamlessly integrated back into the parent company. Therefore, when the parent firm is a customer of their spin-offs like in this case, they can accomplish a very high degree of separation while avoiding the significant challenges of integration mentioned in the ambidexterity literature (e.g. Graebner, 2004; Jansen et al., 2009).

Another contribution of this study is the finding that the parent firm was used as a showroom for the spin-offs' products. In this industry, like in some others, customers simply will not risk purchasing a product that they cannot see working successfully at another similar firm. Visiting another firm where the product was sold, witnessing it working, and being able to speak with the other customers, was frequently a requirement for the completion of a sale. This need to already have established customers in the market represents a significant barrier to entry for start-up companies that do not have the support of an industry incumbent like all of Established Firm's spin-offs, and it allowed the spin-offs to rapidly gain large international clients and overcome the difficult early phase of growth. This appears to be an unresearched finding and there is an opportunity to investigate this benefit further in the literature on corporate spin-offs.

Lastly, aspects of the benefits the parent firm gained and also how the spinning-off of the innovations was accomplished are mentioned to a very limited degree in the broader spin-off literature; however, they are entirely overlooked by the current organizational ambidexterity research. This study shows that the corporate spin-off process can be a way not only for established firms to explore innovation and become ambidextrous, but also an effective method for them to exploit their innovations and possibly have their innovation units achieve ambidexterity themselves. Since organizational ambidexterity research has begun to investigate external forms of ambidexterity such as alliances, acquisitions, joint-ventures, and spin-alongs, researchers should not overlook the corporate spin-off mode, which appears to be a relatively frequent approach to securing ambidexterity in established firms.

7. Conclusion

In this final section, the findings of this study and their relationship to the current literature is briefly summarized. Then recommendations for future research are mentioned, the practical implications for managers are outlined, and finally the limitations of the study are discussed.

The purpose of this study was to explore the research question *how does an established firm secure technology-based innovation through a spin-off?* In order to answer this question, a large established firm and four of its innovative spin-offs were examined. Interviews with four chief level executives and a large amount of secondary data was analysed, in order to gain an in-depth understanding of how an established firm can use corporate spin-offs to secure its innovations.

The current research covering corporate spin-offs was reviewed along with additional theory in organizational ambidexterity research in order to gain a greater understanding of the findings. It was determined that the organizational ambidexterity research was very suitable and informative for framing and understanding the corporate spin-off context.

The findings of this research show that a firm can secure innovation through the spin-off mode by having the necessary antecedents such as a supportive key decision maker, a culture of innovation, and ample organizational slack. This study also showed that innovation units both prior to and after spin-off were assisted by both support and autonomy from the established firm.

Several contributions to research on ambidexterity and corporate spin-offs were found in this thesis. For example, it was found that the spin-off mode provided unique benefits to the established firm in the form of cost-savings and financial gain, and quality improvements on their innovations. Also, the exploration process that achieved the innovations occurred both inside the established firm for some of the companies, and externally in the spin-off mode for others; however, the benefits of managing the innovations through the spin-off mode came from exploiting the innovations and also because some of the spin-offs achieved ambidexterity themselves. Future ambidexterity research should consider the corporate spin-off mode further, because it is a frequent means by which firms achieve ambidexterity, and this study indicates that its benefits are significant and may be unique to this mode.

Issues regarding the difficulties of integrating separated innovation units are discussed in the ambidexterity literature (e.g. Graebner, 2004; Jansen et al., 2009); however, this study found that when the innovations meet the needs of the parent firm and are used by them as products, they do not appear to face the difficulties of integrating the advantages back into the parent firm. As the spin-offs improved their products and capabilities, the established firm was able to seamlessly benefit from the quality improvements.

This study also revealed a potential future topic of research for corporate spin-off literature in the spin-offs' use of the parent firm as a showroom for their products. Having customers of the spin-offs visit the parent firm and view the products working in real-time was a significant advantage for all of these firms and led to their rapid early growth and success. This showroom advantage that spin-offs have from birth has been overlooked, but it is similar to Rogers' (2010) comments regarding the trialability of an innovation, the degree to which an innovation can be experimented with, corresponding to greater adoption and less uncertainty to the individual who is considering it.

The practical implications of this study are for managers looking to stimulate and manage innovation for their firm's needs. This thesis highlights some important antecedents to generating internal and external innovation, such as slack, supportive top-management, and the organization's culture, and also shows that when these are antecedents are removed and replaced with a focus on efficiency it can make further innovation in this way difficult. This thesis suggests that it is important for managers to not excessively promote efficiency and control if they are interested in locating and developing innovations within their firms. This study also gives a clear case example of how middle managers and frontline managers are critical for identifying and managing innovation, and top-management needs to allow for this and give them support and autonomy in their efforts. As the ambidexterity literature shows, there are many different strategies to achieving innovation and ambidexterity; however, the corporate spin-off mode may offer unique advantages to firms looking to exploit their innovations, recoup their costs and turn their innovations into a source of revenue, improve the quality of the innovations, and have their innovation units achieve ambidexterity themselves. If these are the organization's goals, the corporate spin-off mode provides attractive opportunities for practitioners looking to secure their innovations.

Lastly, there are several limitations to this study that need to be discussed. For example, the benefits of the spin-off approach to securing innovation found in this research are likely only

valid for firms whose innovations are used as products of the parent firm. Other types of innovations, like when the innovation itself competes with the parent firm or operates in a completely unrelated market will most likely reveal significantly different findings. Also, there were only four informants interviewed for this retrospective study, and future research would benefit from more informants and possibly a longitudinal real-time process study of the spin-off and parent firm settings. Another limitation is that this study only examines a single parent firm and its spin-offs in the media industry; therefore, future research would benefit from investigating and comparing this process in multiple different cases and within different industries. Also, because culture plays a prominent role in this study's findings, it is a limitation that the parent company and all of its spin-offs were from a single Scandinavian country. Companies with low power distance have been found to be more likely to generate exploratory innovation (Panday & Sharma, 2009), and this is a trait more common in Scandinavian nations; therefore, this setting and research question should be examined in additional countries and a variety of cultural contexts.

8. References

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9. Appendix

9.1 Appendix A – Consent Form

Informed consent form – FOCUS research program

NHH Norwegian School of Economics

The FOCUS-program is a collaboration between NHH Norwegian School of Economics and Norwegian-based multinational firms. One goal of the research program is to develop knowledge on the topics of international integration, managing knowledge workers, dynamic control systems, and change capacity.

We invite you to participate in an interview lasting 90 minutes. The interview will be recorded and notes will be taken during the interview. The interview will then be transcribed. Any information that could identify individuals will be removed (eg your name). Only persons participating in the interviews will have access to material that can identify informants.

Participating in the project is voluntary. You can withdraw at any time. The researchers in the FOCUS program will have access to the transcribed interviews, and they have signed confidentiality agreements. In some cases, a follow-up study will be carried out. If so, you will receive new information and a new invitation to participate.

The data will be used for research, i.e. production of scientific articles and reports.

By signing this form, you consent to participate in the study. If you have any questions regarding this invitation, or you wish to be informed about the results of the study, please contact me at the address below.

Kind regards,

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Informed consent form:

I have received written information and I am willing to participate in this study.

Signature Phone number

Printed name.....

9.2 Appendix B – Interview Guide

This is the original first interview guide. As explained in the methodology section, the interview guides were expanded and focused further after subsequent interviews, so that comparisons of key themes and questions could be made across participants responses. The questions were largely open-ended, and the participants were allowed to speak freely and to take the dialogue in the directions that they felt were the most relevant.

1. When did you first get involved with Established Firm?
2. Can you describe the timeline of the spin-off?
3. Why was it decided that your work should be spun-off from the parent company?
4. How did your colleagues and employees react to information that your project was being spun-off of Established Firm?
5. Who have you recruited and why? Is this affected by the fact that your company is a spin-off? How many initial employees came from Established Firm?
6. What would you describe as your business strategy?
7. Has spin-offs business strategy changed over the years?
 - a. How?
 - b. Why?
8. What advantages has your firm had because it is a spin-off?
 - a. Does this give you a market advantage?
 - b. Does this make it easier to do your job?
9. What challenges has your firm had to face because it is a spin-off?
 - a. How did you try to deal with these challenges?
 - b. Are they resolved? or how do these challenges persist?
10. What policies have you changed during the growth of the firm?

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- a. Why did you make these changes?
 11. What have you had to change about your management style during the history of your firm?
 12. How much influence does Established Firm have over your spin-off?
 - a. How does this manifest?
 - b. Is this an advantage or a difficulty?
 13. How much autonomy do you feel you have?
 14. Do you have responsibilities at the Established Firm?
 15. How do you think Established Firm views your spin-off?
 16. What is the relationship with Established Firm in its role as an owner?
 17. What is the relationship with Established Firm in its role as a customer?
 - a. How does this compare to other customers?
 18. Does being a spin-off of Established Firm affect your relationship with other customers?
 19. Do you have to manage expectations with Established Firm and in what way?
 20. Do you need to protect the firm and employees from Established Firm? What way?
 21. What kinds of relations do you need to have with Established Firm? Why are these important?
 22. How does being a spin-off affect your costs?
 23. How does being a spin-off affect your profits?
 24. Do you think Established Firm could ever try to reintegrate your spin-off? Would it?
 25. How can Established Firm best support your spin-off?

26. What are some key learning you could would share with other spin-offs from Established Firm?
27. Is there anything else you would like to add regarding challenges that you have faced as a manager and CEO of the spin-off?