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Innovate and Tell?

Managing secrets in a complex world

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Managing Secrets in a Complex World

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Abstract

Innovation disclosure is the topic of this study, which in spite of the importance acknowledged to innovation has remained relatively unexplored. Adopting a qualitative research strategy and a multiple case study method, the aim is to provide a managerial view of innovation disclosure and the paradox between secrecy and transparency. The case companies of this study are Volvo group, Husqvarna group and SCA.

While innovation to its nature is associated with the need of secrecy to ensure appropriability, this also leads to information asymmetry between management and owners, causing agency costs. Companies will make voluntary innovation disclosures to reduce information asymmetry to a level where agency costs and proprietary costs are balanced. Moreover, theory implies that beside the need of shareholders, other stakeholders' need will also affect how the companies' handle innovation disclosure.

Findings

None of the three case companies have an explicit innovation disclosure strategy, instead handling the paradox case by case. Industry specifics play a big role in deciding the level of disclosure and transparency. Our findings corresponds with existing theory regarding that companies in high-tech industries have greater possibilities of disclosing innovation-related information compared to companies in the Fast-mover-consumer-goods industry.

Furthermore, the case companies acknowledge a trend towards more openness. The main driver of this development is the increased technological complexity many industries are facing. This complexity is often linked to major trends of connectivity, digitalisation and electrification, implying an increased need of partnership which naturally spurs transparency.

Contributions

This study has illuminated a relatively scarcely researched topic in a new way, by using a qualitative research method as most previous studies have used a quantitative method. We believe that this study will give interesting and valuable insights, both for academia and practitioners aiming to form a strategy or policy regarding innovation disclosure.

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1. Background

1.1 Problem formulation

Today's competitive business climate has put pressure on companies to innovate in order to survive and stay successful (Mumford & Licuanan, 2004). Innovation is driving both macroeconomic development and firm growth and is becoming increasingly important for companies' overall strategies (Datta, Mukherjee & Jessup, 2014; Bellora & Guenther, 2013). Meanwhile, the importance of investments in physical assets, being a more traditional driver of growth, is declining (Bellora & Guenther, 2013). As companies invest billions of dollars in Research and Development-projects each year (Merkley, 2013), innovation becomes not only an internal concern but also of great significance for investors, institutions and other stakeholders (Belloc, 2013). While the internal process of facilitating and promoting innovation is well researched, the external perspective is often overlooked. Due to R&D naturally being associated with secrecy, uncertain outcomes and difficulties in valuation, relations and information sharing with external partners becomes challenging but nonetheless of utter importance (Merkley, 2013).

As public companies have separated ownership and the control over assets, the incentives and information levels can differ between managers and owners, resulting in information asymmetries and so-called agency costs, potentially leading to managerial self-interest and undervaluation of companies (Tricker, 2010). Theoretically, in order to avoid these problems and reach higher market efficiency, full disclosure and transparency between the stakeholders are desired (Healy & Palepu, 2001). Although the sharing of information helps investors and owners to make better decisions, this also incur a cost for companies through diminished knowledge advantages and business secrets. This cost is known as proprietary costs, and while related to all intangible assets, innovation is specifically exposed (Jones, 2007). Inherent in the innovation process is the need for a certain amount of secrecy to sustain and ensure appropriability from the innovations. This prevents competitors from adopting the same technology and protects potential first-mover advantages. Therefore, full disclosure in innovation processes serves an unattractive strategy both for managers and investors (Merkley, 2013, Jones, 2007). According to the theory of agency costs and proprietary costs, companies will have to balance the trade-off between transparency and secrecy in their innovation strategy, only disclosing information when the gain from reducing agency costs exceeds the proprietary cost of the disclosure (Jones, 2007). Since accounting standards have few mandatory requirements regarding information disclosure regarding innovation, the decision of what to disclose is most often up to the company itself (Merkley, 2013).

According to Gassman (2006), there is a paradigm of innovations being a process managed by internal engineers and held secret until post-launch is over. Trends such as globalization, increased technological complexity, and connectivity are changing both business logic and the perceived importance of innovation. In times where agility, flexibility and the focus on core competencies are considered to be important factors of success, Gassman (2006) claims that the *“do-it-yourself mentality in technology and R&D management is outdated”* (pp. 1). This development has for most industries, to a various extent, spurred collaboration with external partners, universities and publicly funded innovation projects, thus including more actors in the innovation processes than before the shift (Gassman, 2006). Furthermore, Stakeholder theory has challenged the more static and inward view of management (Freeman, Harrison, Wicks, Parmar, de Colle, 2010) and focuses on how to navigate through different interests and incentives among all the surrounding stakeholders.

According to Mansouri (2008), the greater portion of research in governing innovation has focused on the input and output parameters of innovation and less on the paradoxes and the management thereof. As innovation becomes an even more central aspect to stay competitive in a rapidly changing business environment (Crossan & Apaydin, 2010), the importance of governing innovation is increasing (Belloc, 2013).

1.1.1 Purpose

According to James (2014) little research is conducted on the disclosure paradox. How do companies manage the balance of what to tell and not tell in regard to innovation? How is this balance influenced by a world where collaboration and integration of different stakeholders are of ever increasing importance? And how are the current and future trends projected to affect the innovation disclosure strategies?

We have come across several quantitative studies examining voluntary innovation disclosure in different manners, such as Jones (2007), Merkley (2013), James (2014) and James and Shaver (2016). However, we are yet to find a qualitative study aiming to understand how companies manage their innovation disclosure strategies. This leaves us with a gap in the literature, also highlighted by James (2014), which this thesis aims to explore.

1.2 Research questions

How do companies manage the dichotomy between transparency and secrecy in their innovation strategies?

a) How are companies' strategies or operating policies regarding innovation disclosure formed?

b) How does the stakeholders' need drive voluntary innovation disclosure strategy?

c) Are there any current trends identified, changing the way companies handle their strategies regarding innovation disclosure?

The first question is of an overarching kind, which we have decomposed into three sub-questions for structure and clarity. Question a) will provide a context of the companies' chosen strategies in regard to innovation disclosure and also provide a background needed to answer question b). Question b) is theoretically driven and make up the main part of the analysis. Question c) is mostly empirically driven, mainly chosen for its managerial implications and outlook on the subject.

1.3 Limitations of the study

The researchers have chosen to focus on public companies. Only Large Cap companies on the OMX Stockholm Stock Exchange were contacted and interviewed. The reason for this is that agency problems mainly occur when ownership and control are separated from each other, as in the case of listed companies. Due to the different nature of service and product innovation, we have chosen to limit the study to producing companies, although from different industries. We believe this is suitable to enable both comparisons and contrasts between the companies. Time and resource constraints have also limited the scope to three listed Swedish companies. While patents and other protective measures have a place in the companies' innovation strategies and influence their level of secrecy, we have chosen to focus specifically on voluntary innovation disclosure, this due to the limited attention that has been given to the subject.

1.4 Definitions

Innovation - *“Production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems. It is both a process and an outcome.”*, Crossan and Apaydin (2010)

R&D - *Research & Development, used as a synonym to Innovation Process throughout the thesis*

Innovation disclosure - *Externally disclosing information about R&D activities/innovations prior market introduction. Pre-announcement is used as a synonym throughout the thesis.*

Agency problem - *Diverging incentives between actors due to the separation of ownership and control of assets*

Information asymmetry - *Arises when the manager has an information advantage over the investors*

Proprietary cost - *The cost associated with revealing information about intangible assets*

IFRS - *International Financial Reporting Standards*

2. Theoretical framework

2.1 Developing the theoretical framework

To develop the theoretical framework a Systematic Literature Review is used, in order to reduce researcher bias and to make sure the review is thorough (Bryman & Bell, 2015). After an initial review, search words are defined along with inclusion and exclusion criteria which then are screened against a pre-set number of databases. Data is collected and reviewed until saturation, and frequent cross-referencing is attained. Gaps in literature are also assessed, both in our analysis and by assessing the “need for future research” sections within the studies that are being read (Bryman & Bell, 2015).

2.1.1 Systematic Literature Review

For the literary review, we are mainly using Google Scholar, along with Scopus and Web of Science to retrieve data. The utilised databases cover a large base of literature to make the SLR as complete as possible. These databases are deemed suitable for the subject of this thesis as well as being available at the University of Gothenburg’s Library Portal.

To get a grasp of the subject and to set up limitations for our study, an initial literature review is made. After the initial review, the following keywords/search terms that capture the scope of the study, as shown below, are used.

Table 1: Search words used for the systematic literature review

Financial analyst innovation	Innovation investors
Information asymmetry innovation shareholder	Innovation investors strategy
Innovation agency problem	Innovation preannouncement
Innovation disclosure	Innovation proprietary cost
Innovation announcement	Innovation secrecy
Innovation corporate governance	Innovation shareholder

Innovation corporate governance disclosure	Innovation stakeholder
Innovation firm value	Innovation standardization
Innovation information asymmetry	Innovation transparency

2.1.2 Critical review of sources

For the respective search of the chosen keywords, the first thirty hits are then reviewed by their title and abstract paragraph to identify which articles/books that are considered relevant for the thesis. To make the judgment in an effective manner, the inclusion and exclusion criteria stated below are used to filter the results. The inclusion and exclusion criteria were chosen in regard to the research questions, limitations and the initial literature review. All articles/ books used in the thesis are published in peer reviewed Journals or by Academic publishing companies. Exceptions are legal texts referred to in 2.4, information from the Governmental agency Vinnova in 2.3.5.1, and the company presentations in the empirical findings in chapter four.

The framework for the literature review is mainly structured on two articles from Jones (2007) and Eliashberg & Robertson (1988). This choice was made due to the articles’ relevance and fit to the unexplored topic of this study. Both of these articles have been widely cited, where, according to Google Scholar, Eliashberg & Robertson (1988) have been cited 90 times and Jones (2007) 72 times since 2013, proving their relevance to days-date.

2.1.2.1 Inclusion criteria

The study focuses on producing and publically listed companies and their communication strategy regarding innovation, hence these inclusion criteria.

Articles/books concerning: *Public companies, Communication driven by innovation, Transparency vs. Secrecy, Firm value and transparency, Innovation Governance, Innovation and transparency Innovation Disclosure/Preannouncements*

2.1.2.2 Exclusion criteria

The study is not looking at other kind of innovations or the facilitation of innovation, nor on private companies. Furthermore, the case study design and the limitation to Swedish companies make comparison between countries superfluous, hence the exclusion criteria.

Articles/ books concerning: *Service innovation, Process innovation, Innovation Incentives, Innovation drivers, Start-ups, Private and Family Businesses, Articles focusing on comparing corporate governance systems between countries.*

2.1.3 Snowballing

When choosing keywords for our SLR, we are aware of the risk of either missing relevant search phrases or that the ones chosen are not correct. Therefore, reference lists of the chosen articles are scanned to look for further referencing that can give further guidance on the topic. This is done in parallel with the SLR, to catch a wider variety of sources that may have been missed or foreseen. The drawback of this method is the risk of following a narrower and more rectified pathway in the search for theoretical data. However, as this method is used as a complement to the SLR, we believe that this risk is relatively minor in comparison to the upside of getting a more thorough search result.

2.2 Introduction to theoretical framework

We will in this chapter investigate and present a theoretical framework to the topic of voluntary innovation disclosure. D.A Jones's article *Voluntary disclosure in R&D intensive industries (2007)* identifies three explanatory factors for voluntary disclosures: *information asymmetry, proprietary cost, and firm specifics* will be used as an overarching framework. As a starting point, innovation as a concept as well as the legal requirements for innovation disclosure is covered.

2.3 Innovation

As innovation is getting more attention, both throughout the business landscape but also within academia, the definition and implications of innovation become increasingly important. According to Crossan and Apaydin (2010), innovation capability is a critical competitive advantage, regarded as the primary determinant of firm performance. They proceed to define innovation as “*production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems. It is both a process and an outcome.*” (*ibid. pp 1155*). However

lengthy this definition might appear, it captures both the different types of innovations as well as the process dimension, traits important to understand the nature of innovation.

Often, innovation is separated in different stages that can be named in different ways such as; research and development (R&D), innovation and commercialisation (Kelm, Narayanan & Pinches, 1995) or process and development (Jones, 2007). Datta et al. (2015) have divided this process into three head groups and six subgroups, which can be seen in figure 1. This distinction tries to communicate the divide between basic research, applied development, and commercialisation where the product offer and market position is more certain in the latter stages. The need for secrecy will vary throughout the process, implying different needs for managing models and guidelines regarding disclosure (Kelm et al., 1995). Some companies and industries will, for example, rely heavily on patenting to protect intangible assets while other use secrecy as their protective measure throughout the innovation process (Bos, Broekhuizen & de Faria, 2015).

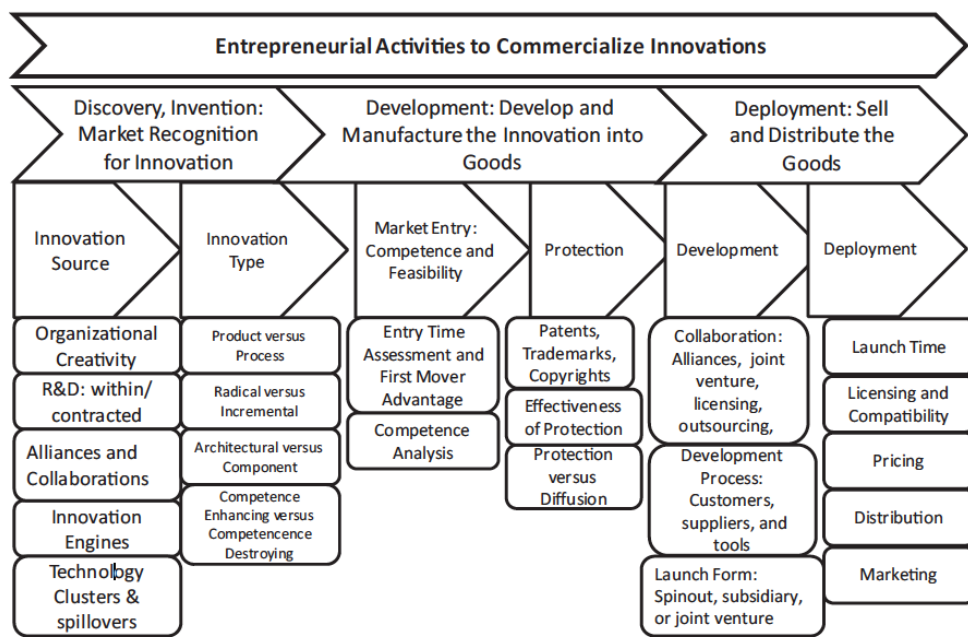


Figure 1: Datta et al. 2015 pp. 228

As innovation becomes an increasingly, if not the most, important capability in creating firm growth (Datta & Mukherjee, 2014), companies work hard to improve their innovation processes and incentives. While the internal focus on improvement and increased output are important, investors and other external stakeholders are also part of the equation and should not be forgotten. In comparison with many corporate activities, innovation stands apart due to high agency costs of promoting inventive activity explained by five traits, identified by Holmström (1989). He argues that innovation by its nature is:

- (1) Long-term oriented
- (2) Unpredictable
- (3) Risky
- (4) Labour intensive
- (5) Idiosyncratic (i.e. firm-specific)

These traits explain why innovation, to a higher degree than most other activities, is subject to agency costs and information asymmetry problems. Since publicly traded equity makes up the greatest part of capital for firm investment, it is important to understand the stock market's role in facilitating and valuing innovation, (He & Tian, 2013).

When innovating, there are different strategies that could be used to ensure appropriation, depending both on firm strategy and industry specifics. To keep up with the pace of change, companies can either develop in-house or acquire companies with innovative ideas (Francis & Smith, 1995). When the idea is acquired there are various strategies to protect the idea, such as patenting or secrecy, methods often used in combination (Bos et al., 2015)

2.4 Innovation disclosure from a legal perspective

From a legal perspective, there are barely any requirements of disclosing detailed information regarding R&D or other types of immaterial assets. This is partly due to the problem of objectively ensuring future value from R&D activities, which is difficult and complicated by nature (Picker et al., 2016). Within the IFRS-framework for accounting in the European Union, the Prudence Principle, stating that costs should not be underestimated and revenues not be overestimated, has rendered the general principle that R&D expenses and other internally generated intangible assets should be book kept as soon as they occur. However, when R&D projects fulfil the requirements stated in paragraph 8 of IAS 38, expenses should be activated into the balance sheet. One of these requirements states that there must be certain future economic benefits of the innovation and that the existence of a market or an internal need can be demonstrated. During the R&D process, these requirements can only be considered to be met when the project enters the development phase. The distinction between the two phases is based on the definitions by IFRS, stated below:

“Research is an original and planned investigation undertaken with the prospect of gaining new scientific or technical knowledge and understanding.”

“Development is the application of research findings or other knowledge to a plan or design for the production of new or substantially improved materials, devices, products, processes, systems or services before the start of commercial production or use.” (Picker et al., 2016; pp. 362)

The implication of current accounting standards, where costs for innovation projects are uniformly expensed, leads to a potential mismatch between expenses and revenues from innovations (Aboody & Lev, 2000; Francis & Smith, 1995). Since R&D-projects in early phases do not qualify to be noted as an asset, while still incurring directly expensed costs, the short-term implication is that reported earnings are decreased as future potential cash flows are not financially acknowledged, even though the net present value of the firm may have increased substantially. In other words, financial reporting on innovation is emphasised on expenses. According to Francis & Smith (1995); Merkley (2013) & Vergauwen, Bollen & Oirbans (2007), this makes financial reporting likely to communicate an underestimated long-term value of innovation, even though it is argued to be one of the most important assets in companies. An empirical evidence of the hardship in valuing R&D is that R&D intensive firms experience significantly larger analyst coverage, more conference calls from analysts as well as a higher effort per analysis (Aboody & Lev, 2000).

Furthermore, contrasted to intangible assets, impairments and values of financial investments and physical assets, e.g. inventory, are routinely reported from period to period. This information displays changes in productivity over time, which is difficult to extract when looking at innovation (Aboody & Lev, 2000; Francis & Smith, 1995). For example, an initiated R&D project could in the short run be cancelled without directly affecting the financial reports, since the costs already are expensed, and therefore no capitalised assets need to be written off. Nevertheless, in a long-term perspective, deployed money into research project without generating any output will, of course, affect the business and subsequently the numbers in a negative way. In the short-term, however, the idiosyncrasy of innovation further complicates the valuation of a company’s ongoing R&D projects (Aboody & Lev, 2000).

Despite the accounting law protecting companies from revealing sensitive information, most to all companies do, according to Jones (2007), engage in voluntary innovation disclosure, also referred to as new product preannouncement (Eliashberg & Robertson, 1988). According to Vergauwen et al. (2007), research has shown that there is a positive correlation between the intensity of intangible capital and market-to-book ratio, indicating that the higher IC intensity, the lesser the book value reflects the true value of the firm. By externally disclosing information about R&D activities/innovations prior market introduction, the shortcomings of accounting practices, not signaling the true value of innovation, can be partially mitigated.

2.5 Three explanatory factors to voluntary innovation disclosure

In this chapter, three explanatory factors to voluntary innovation disclosure as identified by Jones (2007) will be presented, being Information asymmetry, Proprietary Costs and Firm specifics.

2.5.1 Agency cost, information asymmetry, and transparency

Belloc (2012) defines corporate governance as “*a system (that) specifies the distribution of rights and responsibilities among different actors inside the corporation*” (pp. 837). This system consists of both internal control-mechanisms as well as external legal frameworks and practices. Implications for Corporate Governance in innovation could especially be attributed to agency costs and information asymmetry (Belloc, 2013).

Agency costs stem from a separation of ownership and control, creating what is called principals and agents. By assuming that both principals (i.e. shareholder) and agents (i.e. management) are utility-maximizers and that their incentives are diverging, there is a risk that the agent is not acting in the exact interest of the principal (Belloc, 2013). This agency problem is sought to be solved by the implementation of different incentives and corporate governance principles, aiming to align the goals of managers and investors. Tools to mitigate agency costs can be managerial ownership (Hoskisson, Hitt, Johnson & Grossman, 2002), third-party monitoring (He & Tian, 2013) and corporate disclosure (Healy & Palepu, 2001), where this thesis focus on the latter.

Information asymmetry arises when agents and principals have different access to information, typically being that the managers have an information advantage over the investors. As explained in section 3.2, innovation is, compared to other activities, related to relatively high information asymmetry. Managers have incentives to reduce this information asymmetry to avoid adverse selection (Jones, 2007), where investors in the absence of information are forced to “believe the worst,” often resulting in undervaluation (Healy & Palepu, 2001; James, 2014). In conformity with this argument, Vergauwen et al. (2007), state that there is an increasing trend of companies voluntarily disclosing intangible information to reduce information asymmetry.

The presence of asymmetric information implies an increased cost of external financing when issuing new securities. The reason for this lies in the corresponding risk of investors undervaluing the company, reflected in the required premium from investors (Healy & Palepu, 2001). Jones (2007), argues that the so-called “ask-bid-spread,” meaning the price difference between what buyers are willing to pay compared to the offering price for a share, is an indicating proxy for information asymmetry. Hence, a larger information

asymmetry will make the bid-ask-spread bigger and thus the funding of external capital more difficult and costly for the company, subsequently deteriorating stock earnings. The most straightforward way of resolving this issue, according to Healy & Palepu (2001), is by simply disclosing information.

Depending on the stage in the innovation process, different type of information is demanded. In early research stages, investors focus on technical feasibility and risks while gradually shifting to market-related information as projects enter the development and commercialisation stage (Kelm et al., 1995). This implies that early stage disclosures usually are of descriptive and narrative nature and can be found in annual reports as well as non-annual formats. Further along the development stages, more numerical information tends to be released, often in non-annual reports (Jones, 2007). Companies from different industries have shown to put emphasis on disclosure in different stages, where companies with high technological abilities can render big attention and rise in stock valuation from early phase announcements. In other firms, investors need more proof before incorporating the innovation in their valuation, meaning that the companies have to wait until the commercialisation phase before disclosing. Furthermore, specific innovation announcements have less importance in R&D intensive industries, since investors already have incorporated innovation into the stock price (Kelm et al., 1995).

However, contrasting the solution of disclosing more information to reduce agency costs, He & Tian (2013) discuss the possibility that management instead tries to offset and neutralise the potential undervaluation by lower long-term innovation investments and re-allocating them to other, more predictable activities within a shorter time-horizon.

2.5.2 Proprietary cost and secrecy

Without the protection of secrecy in the initial development phase, companies are subject to the threat of imitation and consequent loss of competitive advantage and appropriation. While full secrecy might pose no issues in a privately held company or a start-up, public companies will find themselves in a position where they have to communicate their value and strategic implications to new and current shareholders, while simultaneously protecting their innovations, (Jones, 2007).

Proprietary cost relates to the cost associated with revealing information about intangible assets. By disclosing information, companies can damage or compromise their competitive advantage, resulting in loss of revenue. Proprietary cost theory states that to avoid these costs, managers will avoid disclosure, even though it will make external capital more expensive (Healy & Palepu, 2001). To protect innovations, the two most common strategies are either patenting or secrecy. According to Kultti, Takalo and Taiko,

2007, patents play two separate roles. One is to increase the incentives to innovate by ensuring the innovator appropriability while the other is to diffuse information about the innovation to stimulate further innovation and reduce market inefficiency. For an individual company, the assurance of appropriability is of utter importance, while the diffusion of ideas most often stands in bright contrast to what the company wants to achieve (Kultti et al., 2000). Secrecy, on the other hand, allows the company to reveal as little as they want, not having to obey any patenting standards. However, a company solely relying on secrecy becomes highly vulnerable to potential leakage of information. Therefore, many companies use a combination of patenting and secrecy.

The mix is often a result of the industry logic, where some industries are more patent intensive than others (Kultti et al., 2000). In industries characterised by strong patent protection, proprietary cost tends to be lower. A study by James (2014), shows that innovation disclosures within the pharmaceutical industry, where patents play a significant role of innovation appropriability, are less likely to be followed by competitive patents compared with the communications equipment industry. Nevertheless, whatever chosen combination of patenting and secrecy, the objective will be to reduce the proprietary cost by giving away as little information as possible (Kultti et al., 2000).

The proprietary cost hypothesis stands in contrast to the agency cost hypothesis, which argued that information asymmetry always is to be diminished by full disclosure to remove the risk of adverse selection (Healy & Palepu, 2001). Assuming full rationality, managers will disclose information until the proprietary costs exceed the increase in value following disclosure. Innovation related disclosure differs from general disclosure in that the proprietary costs generally are higher (Jones, 2007). If a company reveals information about innovation in an early stage development, other firms might try to follow and thereby reduce the advantage of an early entrance. However, in cases where the disclosing company has a strong technological advantage, implying long learning and developing periods for competitors, the risk of disclosure is lower (James, 2014). Together with the aforementioned factor of strong patenting possibilities, these are two important elements that determine the proprietary cost, therefore, possibly reducing the trade-off between information asymmetry and proprietary cost (James, 2014).

Information about specific industry profitability could also make the threat of entrance higher. According to Jones (2007), companies operating in R&D intensive industries have fewer incentives to provide useful voluntary disclosures than actors in other industries. Very few companies rely wholly on either secrecy or transparency in their innovation strategy, but instead a mix of the both, aiming to find a balance suitable for the specific firm in its context (Datta et al., 2015).

2.5.3 Firm specifics

The last of Jones' (2007) explaining factors is firm specifics, referring to those drivers not directly connected to agency/proprietary cost theory and shareholders. This chapter will discuss the impact of other stakeholder groups and how the firm specifics, business models, and industry logic affect the choice of strategy.

2.5.3.1 Stakeholder theory

While agency costs try to explain the benefits of disclosing innovation-related information towards shareholders (Jones, 2007), it does not cover the full range of the paradox. In addition, other stakeholders will also influence the optimal balance between transparency and secrecy, hence affecting the acceptance level of proprietary costs by the company. Gassman (2006) discusses the ever increasing complexity and technological intensity in the business landscape, resulting in blurred out industry borders and a subsequent need of reaching outside the company. Hence, the adoption and attention that has been given to Open Innovation during the last decade further emphasise the practical need of incorporating other stakeholders than shareholders in the process (Dahlander & Gann, 2010; Datta et al., 2015). To what extent firms make use of externally sourced ideas and collaboration in their innovation strategy varies, and the same goes for the chosen degree of transparency. This degree is, according to Dahlander & Gann (2010), depending on the network surrounding the company, the innovation climate as well as firm-specific strategies. Datta et al. (2015) argue that the use of networks in innovation strategies is of higher importance in high-technology industries, where the firms are less likely to have all the capabilities needed to commercialize an innovation internally.

In line with the previous reasoning, all benefits of transparency will have to be weighed against the possible disadvantages of sharing innovation-related information, i.e. proprietary costs (Dahlander & Gann, 2010). By adding the stakeholder approach to the explanatory factor of agency cost, more aspects of the issue is covered.

During the mid 80's, Stakeholder theory emerged as a new way of looking at business, corporations, and capitalism (Freeman et al., 2010). Earlier views, like Friedman, with his shareholder focus, stemmed from a time where the business climate was characterised by an inward and static perspective. However, along with radical changes in the business climate, driven by e.g. globalisation, market turbulence and transparency, Stakeholder theory became a well-known concept. The theory states that a company has a number of surrounding stakeholders, groups and individuals, who in various ways are involved in the success or failure of the company. This group of stakeholders are generally considered to consist of at least

customers, employees, suppliers, communities, and financiers, but depending on the business context, more stakeholders can be involved in the company's sphere (Freeman et al., 2010). The different stakeholders often have different incentives and wishes, not seldom contradicting each other, and during the value creation process, some stakeholder are favoured over others. The challenge for businesses is, therefore, to understand and balance those relations and decide where the most value is created in business decisions (Freeman et al., 2010).

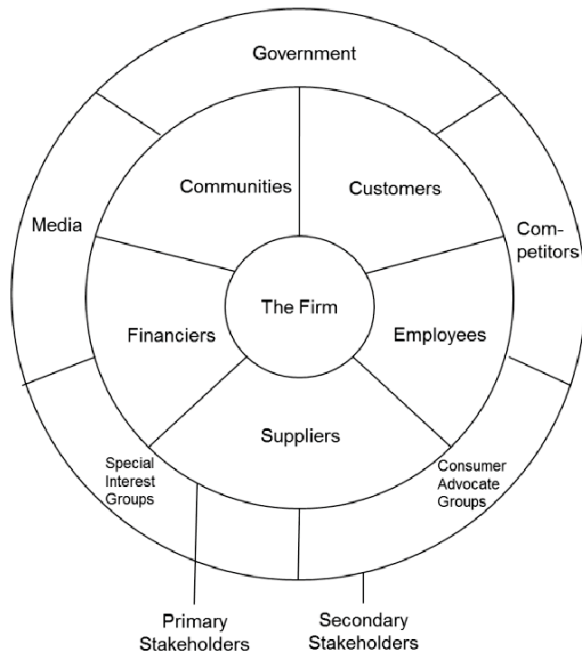


Figure 2 - Creating value for stakeholders

Source: R. Edward Freeman, Jeffery S. Harrison, and Andrew C. Wicks 2007. *Management Stakeholders: Survival, Reputation, and Success*. New Haven: Yale University Press. Originally from a conversation with Robert Phillips.

As shown in the model above, stakeholders can be divided into primary and secondary stakeholders, indicating their proximity to the firm's operations. Innovation differs from other day-to-day work in that it is most often performed within projects, with a start and end. The innovation process goes through phases, from start-up phase to research and later development and communication. During these phases, the stakeholders and their importance in the project will most likely vary as well, making the process view on stakeholder engagement an important factor to take into account, not assuming their importance to be constant from idea generation to commercialisation (Vos & Achterkamp, 2006).

Given this, we assume that the targets of voluntary disclosure are not limited to shareholders and furthermore not consistent during the whole innovation process. Moreover, reducing agency cost is not the sole benefit of sharing innovation-related information, there are also other forces and purposes driving transparency, many of them spanning over several stakeholder categories. The same goes for reasons to stay protective.

In early research phases, firms need to source ideas which traditionally have been done in the in-house R&D facility, ensuring full protection. However, with the paradigm shift towards open innovation as explained by Dahlander & Gann (2010), the importance of external sourcing and partnership in basic research is ever increasing. Based on the understanding that companies cannot, and should not, possess all

knowledge needed to innovate by themselves, Schilling (2005) argues that focus instead should lie on core competencies. Sourcing could be done in various ways, either by actively searching for good ideas to integrate or by joining partnerships and collaborations to perform research. It could be closed partnership under NDA's, research initiatives with universities or governmentally funded research programs (Dahlander & Gann, 2010). According to Schilling (2005), there has been an increased acknowledgment of the importance of these collaborative networks and state-funded research. From a Swedish perspective, this trend is seen in the increased grants paid out by the Swedish Innovation Agency, Vinnova, that reached 2.9 billion SEK in 2016 in various target areas to strengthen Sweden's competitiveness. In return for governmental funding from Vinnova, companies must accept that research results are being shared to a predetermined degree, sometimes internally among the other project participants but also publicly in certain cases (Vinnova, 2015). According to Mohr, Sengupta & Slater (2009), pre-announcing is not only be a result of collaboration, but also a way to get the attention needed to attract partners for future research collaboration.

As stated above, the driver of transparency in early innovation phases is mainly to gain input in research areas. However, getting access to ideas is not the only reason of why companies choose to disclose information about their innovations. When basic research is done and the product development initiates, the focus of disclosures will most likely change. According to Eliashberg & Robertson (1988), innovation disclosures now take the shape of (*new product*) *preannouncements* and function as *signaling tools* for companies, where the most important targets are competitors, customers, distributors and shareholders (Eliashberg & Robertson, 1988). In a study performed by Eliashberg & Robertson (1988), companies mainly using either a "pre-announcing strategy" or a "non-announcing strategy" were investigated. They showed that the firms, based upon their chosen strategies, perceived the risk/benefit trade-off between transparency and secrecy in different ways, the results shown in the table below.

Table 2: Driving forces for pre and non-preannouncing firms

Driving forces for Pre-announcing firms	Driving forces for Non-preannouncing firms
Image enhancement	Cannibalization

Distribution advantage	Competitive reaction
Demand stimulation	Inability to deliver
	Antitrust concerns

2.5.3.1.1 Driving forces for non-preannouncing companies

When disclosing information about innovations, proprietary costs are, as described in earlier chapters, a major concern, namely that competitors will steal your idea. Besides concern for the loss of intangible assets, competitive (counter)reaction is another threat, where possible scenarios are rivals either directing fierce marketing activities at the disclosing firm or release disclosures deliberately matching the initial announcement. According to Robertson, Eliashberg & Rymon (1995), the speed and intensity of an assumed reaction are often correlated with the “hostility” of the signal. To avoid hostile reactions, one can make “cooperative” disclosures, which have been shown facilitating long-term cooperation. However, this is mainly true for mature markets where the competitive landscape is relatively stable (Robertson et al.,1995).

On the other hand, if firm A’s competitor; firm B has made a hostile preannouncement of an innovation they are about to launch, would there be anything stopping firm A from initiating a counteraction? Yes, argues Robertson et al. (1995), and refer to the fear of cannibalization, which is specifically relevant for companies with market dominance and many products within the category. By announcing innovations not yet launched to the public, the firm risks cannibalization of current products and the possibility of disrupting their own market. This fear makes many large, incumbent firms withhold information about new innovations until market introduction. However, while this fear can be perfectly rational, it can also cause inertia, subsequently leading to the incumbent getting outpaced and losing market reputation to the ones more eager to announce (Robertson et al., 1995).

Another factor possibly preventing firms from making voluntary disclosures is the fear to be unable to deliver (Eliashberg & Robertson, 1988; Sorescu,Shankar, Kushwaha, 2007; Hendricks & Singhal, 1997). Investors spend considerable time to investigate and learn about a new innovation disclosure before making any assumptions about increased cash flow and future earnings (Sorescu et al., 2007). In this assessment,

investors will take the reliability and credibility of the firm into account. Have they been able to deliver on earlier promises? Have there been earlier delays or failures to reach the market? If this is the case, the new information will not be valued as high as if the company is known to “tell the truth.” According to Hendricks & Singhal (1997), announcements regarding launch delays on average resulted in a 5.25% decrease in market value. Besides the risk of being undervalued, there is also a threat of legal actions if regulators would deem the announcement to be deliberately deceiving and premature in a way that disturbs competition, also referred to as the use of “vaporware” (Prasad Mishra & Bhabra, 2001). The use of vaporware is especially common in software industries, and companies such as IBM and Microsoft have been repeatedly accused of deliberately stalling competitors’ sales by early and vague new product announcements (Su & Rao, 2010). According to Sorescu et al. (2007), companies should, therefore, wait with preannouncements until they can, without too much doubt, deliver on their promises. This is especially important if the company has failed to deliver on earlier preannouncements. If these requirements are fulfilled, preannouncements will benefit the launch of the product and give higher long-term returns to the company (Sorescu et al., 2007).

2.5.3.1.2 Driving forces for pre-announcing firms

By disclosing innovations, pre-announcing firms felt that they could enhance the overall picture and reputation of their companies. Furthermore, they believed that pre-announcing helped them being perceived as innovative actors and allowed them to foster “*a high growth company image*” (Eliashberg & Robertson, 1988 pp. 286).

While technical knowledge is the core asset in basic research, innovations are dependent on both technology and marketing in the development and commercialisation phase of the innovation, where marketing can help to change and enhance the perception of a new innovation (Datta et al., 2015). Besides directing marketing towards future customers, distributors are acknowledged as important targets of the innovation announcements (Eliashberg & Robertson, 1988). There might be great uncertainty before a product launch about the most efficient way to distribute the product, and early disclosure can help the firm to collect input and feedback from the distributor. Studies have shown that pre-announcements will encourage distributors to start planning for marketing activities, prepare distribution channels and increase cooperation with the supplier (Eliashberg & Robertson, 1988).

Disclosing information about an innovation via articles and press releases create awareness of the product and can delay purchases of rivals’ products (Robertson et al., 1995). Furthermore, if the product is

discontinuous or by another reason requires learning from future customers, pre-announcing is favorable and helps stimulate the demand and future market penetration (Eliashberg & Robinson, 1988). If the adoption of the new innovation will incur switching costs, pre-announcing will be a way to allow the customer to plan for the cost in advance, making the switch more likely (Eliashberg & Robertson, 1988). Pre-announcing can also be a way to understand customers' preferences and perception of the new product to make adjustments before launch (Su & Rao, 2010). Furthermore, the future demand of the product can often be forecasted by assessing how the pre-announcements were received by customers, thus making production planning more efficient (Su & Rao, 2010) and setting the time of launch to an optimum (Eliashberg & Robertson, 1988).

2.3.3.1.3 Specific circumstances for pre-announcing firms

While having assessed the perceived benefits and risks correlated to choosing a transparent vs. secretive innovation strategy, the circumstances *making* a firm choose their strategy is equally relevant. Eliashberg & Robertson (1988) identified four factors favouring the choice of a disclosure-oriented strategy: (1) if the innovation will require high switching costs, (2) the firm does not have market dominance in their segment, (3) the firm is smaller, (4) and the competitive landscape is non-hostile. As an example of the last factor, companies acting within consumer packaged goods are less likely to pre-announce or even to use test markets, this due to the often very fast and hostile competitive responses.

Furthermore, Dahlander & Gann (2010) have also investigated why companies would choose a disclosure strategy, identifying three other factors. (5) If the company has insufficient resources to develop and introduce the product on its own, entering a market alone is not an attractive option. The cost of marketing, developing suppliers and distribution channels can be extensive, and besides the first mover advantages, research has shown that first movers often carry higher costs in the long run (Schilling, 2005). For resource-restrained companies wishing to avoid these costs, pre-announcing can be a tool to engage and motivate more players to enter the new market.

(6) A threat of competitors simultaneously developing and launching a similar innovation will motivate the company to disclose information about their innovation process, not wanting to lose out on the image enhancement aspects of being first with the idea (Dahlander & Gann, 2010). By disclosing information early, the company can be perceived as a first mover, even if they are not the first to reach the market.

(7) Disclosure will also be desirable if the company develops a technology they want to ensure becoming the dominant design, this being additionally important in industries characterized by standardization and

network externalities (Dahlander & Gann, 2010; Robertson et al., 1995; Prasad, Mishra & Bharbra, 2001). While some innovations are stand-alone innovations, others are referred to as systemic innovations that cannot be introduced on their own without significant modifications in its surrounding sub-systems (Kano, 2000). To facilitate the introduction of systemic innovations, some form of standardisation is most often needed. This requires a considerable degree of early stage collaboration, not only by suppliers and companies complementing each other but also by direct competitors (Kano, 2000). An industry characterised by systemic innovations is the mobile and ICT industries, where standardisation have been manifested by the use of generations, such as 2G, 3G, and 4G. When the standard is set, companies can then continue to differentiate themselves and making stand-alone innovations. This will help them compete on price, function, and quality, without having to worry about future integration issues (Kano, 2000). In industries with an emphasis on standardisation, pre-announcing can be a powerful tool to establish standards, especially when a firm with market dominance sends the signal (Eliashberg & Robertson, 1988).

Beside the need of integration, legal policies and governmental regulations set standards as well, where the automotive industry can serve as an example. Standards are set on fuel consumption, catalytic converters, and safety aspects for many decades, often as a way to spur innovation and set the future direction for the industry (Crabb & Johnson, 2010). When setting standards, companies often must not only collaborate and share their innovative strategies with competitors and suppliers but also with governmental agencies.

Furthermore, when introducing new technologies to the market, establishing a standard is often a key parameter in facilitating increased adoption rates to quickly reach a critical mass of users (Witt, 1997). This creates technological “lock-in” effects which can entail network externalities, meaning that a big and common system is more valuable than several small and separate ones, e.g. a railroad or telecom network (Schilling, 2005). In industries characterised by high network externalities, encouraging channel partners to start developing complementary products is crucial to increasing the value of the new innovation, making pre-announcement an attractive strategy (Sorescu et al., 2007; James, 2014). However, while companies in some cases use innovation disclosure as a cooperative signal, James (2014) points out that it also can be used to signal technological superiority. This strategy may discourage competitors from entering an industry since closing a technological gap can be difficult and costly.

2.4 Summary of the theoretical framework

Innovation is considered of increasing importance for company growth and competitiveness, and is by nature risky, unpredictable and idiosyncratic. This results in low legal requirements on disclosing information about R&D activities, but also in innovation being a subject for information asymmetry and

agency cost from shareholders. To reduce agency costs incurred by information asymmetry, disclosure is favorable. However, to appropriate from innovation, a certain degree of secrecy is needed. By disclosing information about innovation projects, valuable intangible assets will get lost and proprietary costs incurred. Therefore, to decrease the information asymmetry while simultaneously avoiding disclosing sensitive information that can be used by competitors, companies have to find a balance between transparency and secrecy

While there is a direct paradox between information asymmetry and proprietary costs, other stakeholders have impact on the companies' innovation disclosure decisions as well. The increasing technological complexity make firms reaching outside their company borders for partnership, research collaboration and publicly funded projects, where the trend of open innovation put pressure on companies to be more open. Network effects and standards make collaboration crucial for success. Due to the perceived importance of innovation, communicating innovative capability is also turning into a powerful marketing argument towards several different stakeholders, such as customers and distributors. There are also barriers beyond proprietary cost inhibiting preannouncement where cannibalization, inability to deliver and antitrust concerns are examples.

Whether a company chooses a disclosure strategy or not depends therefore on firm specifics, industry logic as well as the nature of the specific innovation. Companies are therefore torn, not only between the paradox of information asymmetry and proprietary costs, but also between the need of other stakeholders in their proximity.

3. Methodology

This chapter will present the methodology used in producing this thesis. Used as cornerstones in creating this sections are *Bryman and Bell, Research Methods (2015)* and *R. Yin, Case Study Research: design and methods (2014)*.

3.1 Research strategy

Choosing a research strategy suitable for the study is of utmost importance to succeed with answering the research question (Bryman & Bell, 2015). To perform this study, we have decided to use a qualitative method, where the chosen respondents will be interviewed in order to investigate the dichotomy between secrecy and transparency regarding innovation.

The qualitative method differs from the quantitative method in that for the qualitative method; theory emerges *from* the data rather than being tested through a hypothesis, as in the case of the quantitative approach (Bryman & Bell, 2015). The starting point is open, with an often inductive approach, i.e. generating theory out of observations. Qualitative studies also tend to have an exploratory approach, asking questions such as how or what and trying to shed light on an unexplored context or phenomenon (Yin, 2014). Furthermore, qualitative research often has an ontological view of constructivism, meaning that organisations, cultures or strategies, etc. are continuously influenced and (re)created by its social actors (Bryman & Bell, 2015). We believe this approach to be suitable for the study due to a relative lack of research on the topic and the complex nature of innovation and corporate governance. The aim is not to describe, nor to explain a phenomenon, but rather to investigate and create knowledge in an unexplored research area, which has not yet been clearly defined (Yin, 2014). The constructive view is relevant for this study, as our respondents are part of forming their respective strategies for innovation disclosure.

The quantitative approach also presumes the point of view of the researcher, with pre-set questions and variables. In contrast, the qualitative method wants to capture the respondent's ideas and notions, assuming they are the most knowledgeable in the subject (Bryman & Bell, 2015). This corresponds well with the context of this study, where we want to learn from the respondent rather than just receiving their answers of pre-set questions.

While the quantitative research strategy is static, the qualitative research method is instead characterised by an evolving process (Bryman & Bell, 2015). As for this study, where the previous research is limited and the approach highly inductive, the process based approach is the most suitable.

One of the major strengths of the quantitative research strategy is its ability to create objective, generalisable and replicable results. The qualitative research strategy with its emphasis on softer, non-quantifiable results is often criticised for the lacking ability to generalise (Bryman & Bell, 2015). However, this study does not aim to create results applicable at a population level, but rather to shed light on theory and provide a practitioner's view on an under-researched subject.

3.2 Research design

The research design chosen for this study is a multiple case study design. According to Yin (2014), case studies are suitable when exploring a present phenomenon and the research questions are posed as "how" or "why." The design is particularly good at capturing complex and under-researched areas, this since the researchers get the opportunity to spend more time on every subject, truly aiming to *understand* the context and the preconditions (Bryman & Bell, 2015).

The Multiple case study design is by Bryman & Bell (2015) also referred to as Comparative design, where the logic behind the design is that a case is better understood when contrasted to another. In business research this is a popular design, using two or more organisations as the base for analysis. This study entails three cases, one for each of the three companies being researched (Volvo Group, SCA and Husqvarna Group), and the aim is to understand each company's unique context as well as their common features. An adjacent design is the cross-sectional done, where the focus instead lies on creating generalisable data, and the most common method is social surveys. However, due to our interest of the companies and the industry specifics regarding innovation disclosure strategies, the multiple case study design is deemed the most suitable for this study.

One benefit of the multiple case study over the single case study is that it easier facilitates the building of theory. By comparing several cases, the researchers are better able to discuss in which contexts and under what circumstances the theory is valid (Bryman & Bell, 2015).

Besides the empirical research, the study also entails a theory section. The theory section aims at providing a rich background on previous research in the selected fields, this to facilitate the analysis of the empirical findings.

3.3 Research method for empirical data collection: interviews

The most common practices when gathering data for qualitative research projects are interviews, observations, and assessments of documents (Bryman & Bell, 2015). We have chosen to use semi-structured interviews as the method for empirical data collection due to its potential of giving deep understanding, its fit within the scope of the study, as well as from time and resource aspects. Interviews allow the researcher to attain information of the respondents' experiences in an in-depth manner (Turner, 2010), suitable for the exploratory approach. In this process, we believe that e.g. using the method of surveys or structured interviews would not have given the respondents enough room for elaboration and discussion, given the complexity of the topic. Focus groups could be another interesting approach, but this was not practically feasible in our case due to the problem of matching respondents' schedules. Neither have we used nor gotten access to any strategic documents regarding innovation disclosure as none of the respondents had any. Therefore, this could not be utilised as a data source. However, we believe the research method of interviews to be suitable for our study as it allows us to examine the topic of innovation disclosure from various practitioners' view, aiming to elaborate and compare on how the respective company's representatives perceive the dichotomy between secrecy and transparency in their innovation strategy.

3.3.1 Selection of companies and respondents

When selecting the case companies, the criteria were: Large Cap, producing companies listed on OMX Stockholm Stock Exchange. We also wanted to make sure that the companies came from different industries to facilitate contrasting. Several companies was contacted, some directly and other through contacts of the researchers. The companies replying and accepting our request for interviews were SCA, Husqvarna Group, Volvo group and Ericsson. Due to scheduling constraints only one interview was made with Ericsson, why they are not included in the thesis. Even so, the interview with Ericsson gave us useful insights and interview practise.

The arrangement of interviews with the respondents is mainly done with a convenience and snowball sampling method. According to Bryman & Bell (2015), convenience sampling usually tends to be more acceptable in qualitative studies compared to quantitative ones. The chosen method is, however, mainly chosen due to a limited access of respondents.

We have primarily approached the respective companies through personal contacts, both direct and indirect, and used a standardised email where we have described the thesis topic and what type of roles and persons

we would like to interview. This contact person has thereafter, in accordance to our wishes and instructions, forwarded our message to colleagues that would appear to be suitable for an interview. In some cases, emails are sent directly to persons we believe relevant to interview by searching for their contact details either on web pages or by calling the reception.

In our contact emails, we state interest in meeting respondents with positions related to innovation in the fields of e.g. Research and Development, Investor Relations, Communication, and Finance, to get a spread across roles in the company. The reasons for this are to see whether people in different roles have varying views and/or incentives regarding communication of innovation, but also to increase the internal validity, being further elaborated in section 2.6.2.1. Many of the respondents hold a high position in their company, which according to Bryman & Bell (2015) can be very challenging to reach for an interview. In our case, however, the topic of innovation and our method of using an intermediate in the organization to request for interviews in our place, may have created the interest needed to provide interviews with people of senior positions.

Table 3: A list of the respondents

Respondents	Job Title	Company	Date	Language	Method	Length
Per-Martin Johansson	<i>Director External Communications at Volvo Group Trucks Technology</i>	Volvo Group	2017-03-21	Swedish	Face to face	54 min
Ann-Sofi Karlsson	<i>Technology Strategy and Planning at Volvo Group Trucks Technology</i>	Volvo Group	2017-03-21	Swedish	Face to face	1 h
Anna Sikström	<i>Director Investor Relations at Volvo Group</i>	Volvo Group	2017-03-17	Swedish	Face to face	1.21 h
Lars Stenqvist	<i>Chief Technical Officer, CTO</i>	Volvo Group	2017-04-12	Swedish	Face to face	48 min
Johan Hallendorff	<i>Director for Primary and Concept development at Husqvarna group</i>	Husqvarna	2017-04-04	Swedish	Telephone	52 min

Andreas Rangert	<i>Director for Primary and Concept development at Husqvarna group</i>	Husqvarna	2017-03-14	Swedish	Telephone	46 min
Jesper Sätterström	<i>Vice President Finance and Controlling at Husqvarna group</i>	Husqvarna	2017-04-05	Swedish	Telephone	54 min
Anders Elmqvist	<i>Vice President Finance and Business Development at SCA Global Hygiene Category</i>	SCA Hygiene	2017-03-15	Swedish	Face to face	1.10 h
Jenny Fäldt	<i>Global Research Director Absorption and Skin Health</i>	SCA Hygiene	2017-03-30	Swedish	Face to face	45 min
Anders Gustafsson	<i>Research Manager Exploratory Concepts at SCA Global Hygiene Category</i>	SCA Hygiene	2017-03-30	Swedish	Face to face	1.02 h
Charlotta Larsson	<i>Global Brand Innovation Manager at SCA Hygiene Category</i>	SCA Hygiene	2017-03-30	Swedish	Face to face	45 min
Michael Lövgren	<i>Key Account Manager for Tork and Easy Cube, Away from home</i>	SCA Hygiene	2017-03-29	Swedish	Telephone	1.31 h

3.3.2 Method for interviewing

The interviews are conducted in a semi-structured manner, this due to the method offering both guidance and flexibility (Bryman & Bell, 2015). This approach puts a lot of emphasis on understanding what topics and thoughts the respondent perceive as important, allowing for the respondents to expand and develop their reasoning (Bryman & Bell, 2015). An interview guide is created, based upon the research questions and the theoretical framework, and utilized in all the interviews, with follow-up questions allowed to encourage elaborations. This flexibility allows the researcher to collect the general knowledge while also allowing for specific viewpoints and experiences to be expressed and expanded upon (Turner, 2010). Even so, the flexibility also poses as a downside for the method, decreasing the consistency of the questions

asked. The interchange between the researcher and the respondent may lead to interesting results but might as well reduce the ability of comparison (Turner, 2010).

Before the interview, an email is sent out with the major themes of the interview guide attached. The guide allowed the respondent to start the thought process before meeting us without the risk of getting pre-formulated answers upon the interview (Bryman & Bell, 2015). The semi-structured approach is mentioned in the email as well, describing that the questions should function as a guide, not a questionnaire and that the respondent's viewpoints are appreciated.

Eight of the twelve interviews were conducted face-to-face, all in the respective respondent's office or a meeting room in their company's facility. These places were all quiet and secluded, offering a "safe space" for the respondent to express his or her thoughts, an important trait of a good interview (Bryman & Bell). The other four interviews were conducted over the telephone, this due to geographical factors and/or convenience for the respondent. One example is Lövgren (SCA), who had a long drive to meet a client, during which he preferred to speak to us, allowing the interview to span for almost one and a half hour.

At the beginning of the interviews a thorough preparation and introduction of the researchers are made, this in line with the recommendations of Turner (2010). The confidentiality was discussed and agreements made, details thereof being specified in 3.5 (Ethical position). The length of the interview was indicated, and eventual questions to the researchers answered.

During the interviews, two researchers were always present, both to help guide the direction of the interviews and to make the coding and analysis of the primary data more comprehensive. This since tone and body language could be hard to attain from listening or reading the records/transcriptions. One of the researchers had the main responsibility to lead the discussion while the other took some notes and made sure the relevant topics were covered, this being a division of tasks encouraged by Bryman & Bell (2015). All interviews are also recorded and fully transcribed to ensure transparency and accuracy (Bryman & Bell, 2015). Due to confidentiality agreements, the transcriptions can be retrieved only upon request.

3.3.2.1 Interview questions

According to Bryman & Bell (2015), the interview guide should be used in such a way that the respondent's perception of his or her world is visible, while also allowing for flexibility throughout the interview. The interview guide used in this study comprises overarching themes along with questions for each of the themes. In line with the recommendations of Bryman & Bell (2015), the research questions of the study as well as the theoretical framework are used as a base for the interview guide, this to make sure that the

research question can be answered by the results of the empirical study (in combination with theory). When formulating the questions, it is very important to pose them in a way that allows a different kind of answers, not letting preconceptions of the researchers stand in the way of the explorative nature of qualitative research (Bryman & Bell, 2015). The themes were put in an order that allowed the interview to flow naturally between the topics. The wording of the themes offered to the respondents as well as for the questions posed in the interview was also chosen to be easy to understand yet relevant for the topic, this being an important factor according to Bryman & Bell (2015). While not all of the questions were posed in all of the interviews, all themes were covered due to the respondent bringing them up or in follow-up questions from the researchers. Moreover, concepts at the core of the thesis such as *innovation disclosure* and *preannouncement* were explained in the initial phase of the interviews. In other cases, it was more important to see how the respondent perceive a concept, as in the question “*how would you describe innovation in your industry?*”, showing both how the respondent views innovation as well as its role in the industry.

The interview guide was discussed with our supervisor and tested with people in the researchers' proximity before the first interview. Even though the structure of the interview guide stayed intact after the initial interview, some wordings that appeared unnecessarily complicated was changed. For the full interview guide, see 9. Appendix.

3.3.3 Language

As the interviews and subsequent transcriptions were all done in Swedish, the empirical part consists of citations and information that are translated by the researchers. Even though the translation has been done with great care to ensure a proper and correct result, translating is never without a problem. According to Bryman & Bell (2015), translation is more of an interpretative process than something purely technical. Expressions, Idioms and intensifying words used in Swedish might not have the English equivalent, leaving the researchers with the responsibility to translate them accurately. To further ensure the correctness of the translations and to avoid misinterpretations, all respondents have approved the empirical findings, as presented in the thesis.

3.3.4 Analysing the empirical data

The grounded theory has been used, referred to as the most widely used method for analysing qualitative data, being characterised by the use of coding and constant comparison (Bryman & Bell, 2015). The method works well with the exploratory approach of this study, emphasising the need of constantly returning to the

actual data, searching for recurring themes and concepts (Bryman & Bell, 2015). After all the interviews were transcribed and read through, both researchers have systematically assessed the data company by company with the use of open coding. All respondents have their own color to separate the answers from each other and to facilitate citing in the latter presentation of the data. In the open coding method, data is sorted and grouped into themes, where patterns of agreements and diverging opinions easily can be identified. Topics frequently found in the data are then formed into concepts, and redundant data is cleared in this stage to gain a better overview. By assessing the concepts, categories can then be formed, often constituting of several concepts. The process is of an iterative kind, requiring the researchers to constantly revisit and compare the data until saturation is reached (Bryman & Bell, 2015).

The coding of data is conducted as consequently as possible among the three companies, but varies to a certain degree since the interviews are done in a semi-structured manner. The respondents naturally reply in different ways and depending on company-specific circumstances, different knowledge and experiences, the interviews are heading in somewhat different directions.

The decision of presenting the empirical findings company by company is based on an aim to help the reader get a good picture of what approach each company has towards the topic. In contrast, the analysis is arranged in themes where comparisons among the companies and industries can be made. We believe this is the most effective way of facilitating the understanding of industry-specific characteristics, while at the same time get an internal picture of how the companies have formed their respective strategies.

However rigorous the method is, grounded theory comes with its limitations. Using an open coding method, the desired state of the researchers would be the "*tabula rasa*," namely that no preconceptions would interfere with the analysis (Bryman & Bell, 2015). Moreover, the fragmentation of data that coding entails creates the risk of important information being left out. In qualitative research, researchers are never fully objective, but instead (reluctant) actors in the study. While there are other, more formalized and possibly objective ways to code the data, the grounded theory offer several benefits, Bryman & Bell (2015) state that the method is particularly good at dealing with complexity and unexplored areas. Moreover, it has a strength in linking theory with practice, a trait often appreciated by practitioners (Bryman & Bell, 2015).

Worth mentioning is the development process and learning curve during the work with the thesis, where our knowledge has increased the more interviews we have conducted. Therefore, another sequence of the interviews could have affected the collection of empirical findings. However, to reduce the effect of this,

all interviews were conducted before analysing the data, and all transcriptions were read through by both of us, prior the start of writing the empirical section.

3.4 Quality of the findings

3.4.1 Reliability

3.4.1.1 Internal reliability

In qualitative research, internal validity refers to the potential issue of researchers interpreting observations differently, also known as *inter-observability consistency*. To ensure that internal reliability is met, the interviews are recorded and two interviewers are attending each interview, measures recommended by Bryman & Bell (2015). This gives the researchers a possibility to listen to the interviews in post to clarify any uncertainties that may be difficult to grasp through the transcriptions. After each interview, we have sat down and discussed our thoughts and also transcribed the interviews as soon as possible, before small interactive signals such as body language, tones etc. are forgotten. To avoid misinterpretations between the researchers and reach a higher inter-observer reliability, we have had continuous discussions to make sure we both agree on our interpretations and conclusions when coding and analysing the data.

3.4.1.2 External reliability

External reliability, i.e. the degree of replication, is typically very hard to achieve in a qualitative study, this due to social circumstances being impossible to freeze (Bryman & Bell, 2015). Regarding the external reliability, semi-structured interviews make it difficult to fully replicate, even though the interview guide will be followed and used as an overall framework. Due to the non-probability sampling that will be utilized in this study, the replicability and thus external reliability will be decreased (ibid.). To mitigate this problem, the method utilized to choose the respondents will be explained in detail throughout the thesis.

3.4.2 Validity

3.4.2.1 Internal validity

Internal validity, namely that the observations/empirical results match with the theory and concepts that are being developed, relies heavily on having a thorough research design (Bryman & Bell, 2015). Bryman & Bell (2015) claim that the internal validity tends to be higher in qualitative research than in quantitative, this since the researcher spend (longer) time with the participants, leaving less room for misunderstandings and simplifications. To facilitate an accurate analysis, the codification process of the empirical results will pose high demands on the researchers, this to ensure as unbiased and objective results as possible. The

interviews are also transcribed and repeatedly revisited to ensure transparency and accuracy (Bryman & Bell, 2015). In this thesis, each company has been represented by at least three respondents, all from different positions in the company and relations to the innovation disclosure process. As the respondents can confirm or oppose each other's answers, the representation has given us more confidence in making generalizations on a company level. Moreover, the multi-case study design further strengthens the ability to cross-examine and compare with theory.

To reach a higher degree of internal validity, triangulation is often used as a way to control the results of one method by using another, such as document analysis or observations (Bryman & Bell, 2015; Yin, 2014). As noted earlier, observations were not feasible due to scheduling concerns. In this study, another way of doing this could have been to collect and analyse press releases or similar announcements, to see what type of output the companies produce regarding innovation disclosure. This was, however, due to time constraints not feasible to conduct alongside with the interviews. Furthermore, our interest in the respondent's personal view and outlook of the topic from their respective job positions made a document study, being of historical and company aggregated kind, outside the immediate scope of this study.

3.4.2.2 External validity

External validity concerns the generalizability of a study. Sample size will affect the external validity, where qualitative studies typically have smaller samples than quantitative, this representing a problem for the method. To attain large samples in a qualitative study is hard due to the longer time spent on each of the respondents, as well as for finding as many respondents willing to offer their time (Bryman & Bell, 2015). While qualitative studies, in general, suffer from lower external validity, it is particularly true for the case study. When only assessing one (or three) cases, how could the results be generalisable to a population? The answer is that they cannot. Instead, the cases offer a possibility to contrast and visualise otherwise very abstract theory in a way that can offer new perspectives and starting points for future research (Bryman & Bell, 2015). While the results can also give guidance to practitioners in the field, the results should not be treated as something immediately applicable to other cases, due to the highly contextualised nature of the research design (Bryman & Bell, 2015).

3.5 Ethical position

When conducting research, several ethical issues need to be taken consideration to, e.g. the purpose of the study, freedom of participation, confidentiality issues and the utilisation of data (Bryman & Bell, 2015). We have in our requesting emails as well as at the beginning of each interview presented ourselves, the chosen topic as well as the background of why we are writing a thesis, namely that it is part of our Master

Program at the School of Business, Economics & Law at the University of Gothenburg. Furthermore, all respondents have been informed about the other participating companies and colleagues in the study.

Before recording the interviews, all respondents have given their permission, and they have also been given the opportunity to read through and clarify any misinterpretations or answers that appear to be sensitive in certain aspects. There have been some occasions where respondents have provided us information that they asked us during the interviews explicitly not to include, but which has enriched the discussion and helped us gain a personal understanding of the subject. In these cases, the information has been left out of the finished thesis. No respondent or company has expressed any wish of being anonymised in the study. While no written agreements have been made, oral agreements have been made with all respondents before each interview.

4. Empirical results

The empirical results are split in three sections, one for each of the case companies. The structure is based on the themes and concepts identified in the coding process described in 3.3.4. Due to industry characteristics and different roles of the respondents, we have chosen not to follow the exact same structure for the three sections, instead focusing on the relevant findings and main themes brought up by the different companies.

4.1 Volvo Group

“The Volvo Group is one of the world’s leading manufacturers of trucks, buses, construction equipment and marine and industrial engines. The Group also provides complete solutions for financing and service. The Volvo Group, with its headquarters in Gothenburg, employs about 95,000 people, has production facilities in 18 countries and sells its products in more than 190 markets. In 2016 the Volvo Group’s net sales amounted to about SEK 302 billion (EUR 31.9 billion). The Volvo Group is a publicly-held company. Volvo shares are listed on Nasdaq Stockholm.” (Volvo Group, 2017)

Table 4: Volvo Group’s owner structure

Volvo Group			
<i>Largest shareholders as of 2017-03-31</i>	<i>% of capital</i>	<i>% of votes</i>	<i>Board representation</i>
Industrivärden	7.0	22.6	Yes
Cevian Capital	8.7	15.5	Yes
Norges Bank Investment Management	3.1	5.4	No

Respondents

Per-Martin Johansson - *Director External Communications at Volvo Group Trucks Technology*

Ann-Sofie Karlsson - *Technology Strategy and Planning at Volvo Group Trucks Technology*

Anna Sikström - *Director Investor Relations*

Lars Stenqvist - *Chief Technical Officer, CTO*

4.1.1 Innovation disclosure strategy

According to all respondents, Volvo does not have any specific innovation disclosure strategy or policy, but they all agree that Volvo traditionally has been relatively restrictive in this field and still is to some extent. Stenqvist says that the general setup is to be careful and restrictive due to the risk of losing comparative advantages, and Johansson has a similar view adding that: *“The basic idea is that everything we do without external financing is classified”*. In a mature industry, consisting of many competent players where no one can be viewed as noticeably superior over another, Stenqvist highlights the obvious, but nonetheless important fact that if Volvo invests e.g. two bn. SEK in a research project, they have to ensure appropriability of this where secrecy to some degree is needed. Especially the product launch plan, spanning over eight years, is confidential according to Sikström and adds that she sees a trend of innovation getting more refined at Volvo. *“We work a lot with service and aftermarket development where margins tend to be higher. A more constant revenue stream also decrease fluctuations in weaker sales periods of new vehicles”*.

Karlsson emphasises the enormous development costs for a new truck model and the fact that new generations are launched relatively seldom. In this development work, Volvo and its competitors work extensively with IP-protections such as patenting and pattern protection. For this, Volvo has well-managed strategies that among other things states within which fields Volvo should focus their patenting efforts. *“This strategy is confidential”*, says Karlsson and adds that a specific disclosure strategy would probably not be especially useful or practical due to the difficulties of covering all possible eventualities. Johansson agrees and says that the strategy in practice to a large extent is event-driven. The decisions are often based on sound judgment and preceded by internal discussions, e.g. with IP and communications. Sikström mentions that she and Stenqvist for example, often prior to the quarterly reports have the discussion of how to manage the balance of what to say and not. *“Everything we say needs to cohere among all stakeholders. Investors, customers, suppliers, all have to get the same message”*.

Within Volvo's industries, it is common to use IP-protection. By protecting patterns and solutions, Volvo can, apart from protecting the design itself, also ensure the exclusive right of producing and selling spare parts. *"This lock-in effect has a substantial effect on our finances"*, says Stenqvist. He argues that the protection system itself naturally implies a strong focus on secrecy. Once a design or pattern is published or shown in public, by Volvo or anyone else, it cannot be filed and protected in post, says Stenqvist. Therefore, the development work and field tests are done very carefully, where all vehicles must be masked properly in order to avoid that they get photographed by anyone. On the other hand, Volvo and other competitors sometimes publish innovations in an early stage without protecting them. This strategy is used to avoid being trapped by competitors' patents or pattern protections, according to Stenqvist. By publishing, you will not be able to get your own exclusive right, but neither will any competitor.

4.1.1 Innovation disclosure drives expectations

Adding to the explanation of Volvo's traditionally restrictive nature, Karlsson says that they have been careful in not creating inflated expectations among their customers. Both she and Johansson say that the different brand companies within the group have preferred to have products that are ready for the market before starting to communicate. However, Karlsson believes this has gradually changed as customers have gained a better understanding of what they can expect in their next truck and what is more of a conceptual solution. When introducing new technologies and solutions, innovation disclosure also serves the purpose of preparing customers for these shifts. *"We try to provide solutions to problems, which will sometimes give the customers benefits that they did not know they needed. You then have to plant the idea to let the customer get used and familiar to it in an early stage"*. Johansson adds that Volvo also gain feedback from users and that disclosures can create trust among customers about the future of Volvo and thereby strengthen the long-term customer-relation. *"When customers are choosing what truck to buy today, they often want to choose a company with whom they can have a longer relationship with. If we can prove that Volvo will be relevant in 10, 20 years, then we can win them over"*.

Sikström has a similar reasoning in her role at the Department of Investor Relations. She stresses the importance of communicating a well-balanced picture to investors that reflects a substantial and commercial value, but still shows that Volvo is an innovative and visionary company. *"We are careful in not talking too much about new and flashy technologies even though people think it is exciting and fun. Diesel engines are still the bulk of our business and subject of innovation and it is important to reflect this in our communication. We are careful when communicating around prototypes, trying not to give the impression that we have a finished product. It is also important to be clear that the prototype is not reflected in our revenues yet, since we are only conducting tests... here, the timing of disclosure is very important"*.

Stenqvist means that the opportunities of being transparent within the innovation process roughly follow three cycles. There are greater possibilities of being open early in the process and prior launch, while the mid-phase often is characterised by more confidentiality.

4.1.3 Drivers of innovation disclosure

Looking from a historical perspective, Stenqvist says he believes that Volvo has been “*too restrictive*” from a disclosure perspective. Due to this, there is currently an undergoing change process, initiated before he entered his current position, where the board formally has requested that Volvo needs to better communicate their innovative capability. “*It is important from a shareholder perspective that we are communicating this properly*”, argues Stenqvist. On the question regarding what stakeholders Volvo primarily are targeting when disclosing innovation-related information, Stenqvist says that it traditionally has been, and still is today, mostly towards suppliers and partners. “*There are other areas as well such as brand strengthening, positioning, and employer branding, but mostly partners. This is increasing as we explore new technology fields. You would be surprised of how many companies that contact me in my new role that wants to enter some kind of partnership. It is everything from start-ups to our biggest logistics customers and major tech-companies*”. He continues and says that these companies often see big changes coming, not seldom related to connectivity, automation, and electrification, that they cannot fully approach themselves in their normally quite traditional businesses. “*Partnerships have got a whole new significance. Before you formalise a partnership you have to agree on what level to share information in order to get access to each other’s knowledge, it is a trade-off*”.

All other respondents mention that they have noticed a change towards more openness during the last years, although they did not explicitly mention the Board’s requirements. Sikström says that she earlier perceived Volvo to be very “engineer-” and inside-out focused, while this now has changed as more stakeholders require information and more input to innovations are coming from the customer side. Johansson explains by saying that: “*Traditionally, Volvo has not said anything before product launch and during the five years I have been here, I have had to fight to get permission to publish certain material in early stages. Today, however, I can notice a change that people tend to be more open*”. Karlsson perceives that Volvo earlier has been quite reactive in their communication but notices that the Communication Department push out more information now than before and that the internal communication around innovation has increased as well. However, she says that the trend of open innovation progresses slowly, bearing in mind the internal attention it has had. Along with the decision of being more open, Stenqvist points out that this change has not happened without internal debate. “*Some parts of the company lost power, especially the brand*

organisation that earlier could choose from a bigger palette of selling arguments. When you release information in earlier stages, some of their possibilities are reduced”.

4.1.4 Communication and the competitive landscape

Recurring in the interviews is that some competitors of Volvo have been more aggressive in their communication of innovation and that Volvo is driven to become more proactive due to this. Karlsson mentions Mercedes/Daimler being more communicative and Stenqvist says he perceives an industry trend of bolder announcements. He exemplifies this by referring to when MAN and Mercedes said they were launching full-electric powered heavy trucks. After a closer look at the announcement, Stenqvist understood that they are conducting a three year test period consisting of 5-20 vehicles, with an ambition of putting this technology into serial production somewhere around the year 2020-2021. *“Instead of doing what the industry calls a “field test”, which usually is extremely secret, they made a press release and communicated it as a product launch. Thanks to this they received a lot of media publicity and is seen as an innovative company.”* According to Stenqvist, this surprised the industry since it was a new way of communicating. On the question if he could act on this announcement in favor for Volvo, Stenqvist says that the competitor for sure increased their exposure, although the content in reality, from a technical perspective, was nothing specifically new to Volvo. *“I think it is the right way to do. They have not promised anyone more than we have and if they fail no one will make them accountable for it. However, they stressed their competitors”.*

Related to this trend and the previous unwillingness of communicating too much in conceptual terms at Volvo, Stenqvist elaborated around the time perspective of disclosures and differences between promises and ambitions. *“We talked about this yesterday at the office. If you say that something is going to happen in six months, then it is a promise, but if it is in five years you have plus minus two years. If it in the end did not happen after five years, we probably have a reasonable explanation of why it failed. It could be related to laws and regulations or that for example prices of batteries did not fall as we expected, and this story will probably be relevant for our competitors too”,* argues Stenqvist. He also says that you in general can be more open around processes than products, even though important details can be sensitive. *“Many thought it was extremely remarkable that Toyota was so open with their idea of Lean Production, even inviting competitors to their factories. People were thinking: What’s the catch? Are they teaching wrong? But Toyota believed that every time they learned someone, they were forced to think through the model and find gaps in their reasoning. They also knew that it takes at least 10 years for competitors to implement the system and by opening up you create internal incentives to continue developing the concept in order to avoid getting caught up”.* However, an important process where Volvo has a competitive advantage is

financial solutions. *“We finance a lot ourselves and how we do this and get capital is needed to be more secret, but this may also be because it is close to the customer”*.

4.1.5 External projects and public funding

A substantial part of Volvo’s research and development is conducted externally in state-funded projects via e.g. Vinnova. Karlsson and Johansson emphasise that one reason for this is that Volvo cannot do everything themselves since they do not have knowledge in all fields. *“Our industry has become much more complicated than before with automation, electrification, connectivity and computerisation. Today, it is impossible for both us and our competitors to be experts in everything, we, therefore, have to look wider and work with partners and universities”*, argues Johansson. He mentions that governmental institutions realise the complexity around e.g. safety, emissions and traffic patterns which require research collaboration to find future solutions, hence offering public funding to research projects. In this, there is also an aspect of being clear in the communication about what technological level and maturity Volvo has reached. If not, there is a risk that governmental institutions may tighten legislation in a faster pace than the company can cope with, according to Johansson.

The more collaborative approach naturally leads to a more open innovation climate since the results need to be shared to a certain degree. *“We are part of research programs where data is fully shared with direct competitors”*, says Stenqvist. The challenge in these projects therefore lies in companies’ ability to use the results in the smartest possible way to create customer value and get ahead of competitors, explains Johansson. Furthermore, thanks to the numerous projects, he says that basically all material for press releases, articles and other events where Volvo wants to communicate innovation, can be sourced from external projects as they already contain public, and therefore less sensitive, information.

Karlsson mentions that the initial contracts and agreements of the public projects determine the transparency level to a large degree, where both the IP- and Legal department are involved. From a disclosure perspective, she elaborates that it is not only the result and findings of the projects that reveal information. Being associated with certain projects also signals the strategic direction of what research fields Volvo are focusing on. In other words, the first question they must ask themselves is whether they want to signal that they are doing this or not, and later what content to disclose. *“You have to think several steps ahead when deciding what projects to enter”*, says Karlsson. To further picture the complexity, she adds that by being open, chances of getting funds for projects increase. These are some type of questions she is faced with in her daily work of managing the paradox between transparency and secrecy.

An example of an external project is the collaboration with the mining company Boliden in one of their underground mining sites, where Volvo is conducting tests with an autonomous truck. In this case, however, Stenqvist and Sikström point out that the signaling effect is not so controversial or harmful. Within the industry, some research fields are considered more or less obvious and self-evident where connectivity, electrification, and autonomous driving are some examples. In the case of the Boliden-project, Volvo has chosen to communicate quite extensively, and Stenqvist mentioned that there were two factions discussing whether or not this was the right strategic direction prior the decision. One did not want to reveal what the company was doing because it was such a big strategic move, while the other argued that it would be a bigger risk of not telling anything. *“We are communicating what technology we are using but for autonomous vehicles everyone uses Lidar-technology, whether it is Uber or Google. It is nothing new”* emphasises Stenqvist. Nevertheless, by showing that Volvo has come this far with autonomous vehicles, already operating in an underground mine, he thinks that Volvo, similar to the earlier example of MAN and Mercedes, has put some pressure on its competitors but without revealing too sensitive information. He also explains that one reason of locating the project to a mine is that this test environment has real-life operations but is secluded from public roads where legal concerns forbid this type of testing.

Looking at the stock market, Sikström means that financial analysts’ view of the company would change drastically if Volvo did not signal that they are managing the technological shift towards autonomous vehicles, basically by lowering their projections. We asked how she thinks the market is incorporating long-term innovation news in their short term valuation where she answered: *“Their projections are based on that we are keeping up with the market and constantly develop our products. If we would not, the trend would be falling. Of course it matters, but today’s discounted value of a commercialised solution in ten years is generally pretty moderate.”*

4.1.6 Information asymmetry and shareholders

In general, information asymmetry does not seem to be a practical issue from an innovation perspective at Volvo. The level of trust is not what distinguishes the investors, but rather their interest and knowledge which vary among them. *“Some are fine in just knowing that things are happening, others want to know more specifically what we are doing”*, says Sikström. Volvo’s two largest owners, Industrivärden and Cevian Capital, both have a representative on the board which means that they have a role in managing and monitoring the company. *“They know how money is being invested and have a direct or indirect control function. Minor owners and those who have not yet invested in Volvo do obviously not get the same insight in the company”*, says Sikström.

She also points out that they prefer engaged owners with good knowledge, industry insights and high demands in favor of those looking for short-term profits. *“But from a communication and disclosure perspective I do not notice any difference in their demand from us, it is rather as I said before more related to interest and knowledge”*, Sikström adds. Stenqvist has a similar view and notes that the financial analytics are knowledgeable, well informed and ask good questions during their meetings but that satisfying their curiosity seldom is a problem. *“We are going to talk about innovation at our capital market meeting this year. From what I have been told, it is still relatively easy to satisfy their needs by communicating on a general level which gives them the answers they want. The information asymmetry is not a problem in the way that we have to answer “no comments”. That happens very seldom, they do not push it that far”*. Another way Volvo is facilitating the relation with its’ investors is that they now report forecasts of R&D-development in their quarterly reports, stating if they believe that there will be a net capitalisation or depreciation of R&D-assets.

4.2 Husqvarna

“Husqvarna Group is a global leading producer of outdoor power products and innovative solutions for forest, park and garden care. Products include chainsaws, trimmers, robotic lawn mowers and ride-on lawn mowers.

The Group is also the European leader in garden watering products and a global leader in cutting equipment and diamond tools for the construction and stone industries. The Group’s products and solutions are sold under brands including Husqvarna, Gardena, McCulloch, Poulan Pro, Weed Eater, Flymo, Zenoah and Diamant Boart via dealers and retailers to consumers and professionals in more than 100 countries. Net sales in 2016 amounted to SEK 36bn and the Group has around 13,000 employees in 40 countries.” (Husqvarna, 2017)

Table 5: Husqvarna Group’s owner structure

Husqvarna Group			
<i>Largest shareholders as of 2017-03-31</i>	<i>% of capital</i>	<i>% of votes</i>	<i>Board representation</i>
Investor	16.8	32.8	Yes
Lundbergsföretagen AB	7.5	29.4	Yes
Didner & Gerge Funds	4.8	2.8	No

Respondents

Andreas Rangert - *Vice President Product management and development, Husqvarna division at Husqvarna group*

Jesper Sätterström - *Vice President Finance and Controlling at Husqvarna group*

Johan Hallendorff - *Director for Primary and Concept development at Husqvarna group*

4.2.1 Innovation disclosure strategy

According to all three respondents, Husqvarna has been relatively restrictive in communicating innovation, mainly focusing on this when launching new products. They have not stated any explicit strategy but Rangert says there is an unwritten rule of not publishing new product in their catalog before passing the

“Production Gate” in Husqvarna’s internal development process. He also says that they are more careful from a disclosure perspective compared to their competitors.

Husqvarna’s sales have a strong seasonality emphasis at Q1 and Q2, and usually they have an internal conference in June where they present new products and innovations. Later on in August, they start providing information to their 25 000 dealers in various regions. Looking at the professional end-user segment of Husqvarna, customers are often operating within industries characterised by the importance of run-time, i.e. a high utilisation level of the products. This implies, according to the respondents, that the industry is somewhat conservative when it comes to innovation, even though Husqvarna is seen as an innovative player. “*Customers do not always see innovation as something positive*”, says Rangert and further explains that the professional segment often prioritises reliability and prefer adhering to well-proven methods and products. On a chainsaw, Rangert mentions that there are often small improvements around the design and function of the chain, which are not necessarily visible but makes a big difference in daily operations. “*It is something the customers strongly appreciate and value when they start using the product, but it is difficult to communicate around*”.

The product plan spans approximately over five years today. “*We have a pretty clear idea of what products we want to be launched until 2022 but we also have a division looking at primary technology development, focusing more on future concepts.*” The development times differ some between Husqvarna’s divisions and whether it is a new generation or enhancement of existing products. However, typically they do not communicate more than one year ahead, Rangert mentions. “*It is difficult to communicate around products. In our hand-held product segment, we have a competitive situation with our main competitor Stihl that we are playing a bit of cat-and-rat-game with. You do not want to reveal too much what products you have in the pipe but in the same time it is good to keep them under pressure*”. Another reason for not communicating too far in advance is that innovation disclosure unconsciously tend to lower demand for existing products, making it difficult to sell remaining items in stock. “*The transition between generations can be difficult to handle, you have to be careful, but maybe we are more restrictive than others*”. There are, according to Hallendorff and Rangert, sometimes diverging opinions internally regarding the level of transparency, primarily between the R&D departments and Marketing/Sales. “*Marketing and Sales often want to communicate earlier than we do and I understand it from a brand development perspective but we try to be restrictive and find a good balance*”, says Rangert. According to Hallendorff, people within R&D department perceive a risk that not fully developed products can appear to be ready for the market the upcoming year in case they communicate too early. “*I communicate as much as I can internally but I try to be very clear when communicating with Sales to avoid misunderstandings*”.

4.2.2 Communication and the competitive landscape

Regarding that Husqvarna's competitors tend to be more offensive in disclosing information, Hallendorff mentions the competitive situation with Stihl. He refers to an example when they were quite open in communicating their development during an engine conference. Stihl announced that they have worked five to six years with the development of using magnesium in pistons, but not exactly how and what type of alloy they use. Moreover, they told that they have come pretty far and have 600 machines currently on field tests. *"They are probably confident that it is not a walk in the park for their competitors to develop this"*, says Hallendorff. He further elaborates around the actual risk for Stihl related to the disclosure, when development periods for competitors span over several years: *"Let's say they launch this in one to two years, when doing this the secret is revealed anyway since we can buy the product and analyse it. Therefore, the secret is not that much of a big deal, but they made us understand that they are doing well in this area ... I think it is the right way to do"*. In case Stihl fail to launch the technology in the end, he says that it still might have frightened competitors and got them to allocate resources to something that does not work. From an anti-trust perspective, Hallendorff stresses that Stihl have not promised anything, just expressed that they are trying and have products on field tests.

In contrast to Husqvarna's restrictive approach regarding traditional products, Husqvarna have started to communicate around a future concept called Silent City. This concept is a projection of how Husqvarna view future forest and park management from a sustainability perspective. As in many industries, connectivity is one area of development that Husqvarna is looking at related to the Silent City concept. *"We have had some external events a couple of years now, where we invite managing organisations of larger park properties in for example Rome and Paris. Without talking on a detailed level, we get the chance to express our view of the industry development, where a lot is about Virtual Reality and Connectivity"*, says Rangert. The main purpose is to show that Husqvarna is at the forefront and create PR-value, and Hallendorff emphasises the importance of Husqvarna being perceived as an innovative company. *"Openness is important. My personal opinion is that it is more important to communicate that you are an innovative company than keeping everything secret. This creates interest among future employees, potential external partners and gives you free PR"*. He also adds that you can communicate a direction without getting into details that can be copied by anyone, and Sätterström further argues that there are common denominators of innovation within the industry that are not sensitive to talk about. On the same time, he put emphasis on the need for secrecy in certain aspects. *"The fact that we are working with connectivity in our products is no secret, everyone does that. However, if details were revealed it would hurt us for sure"*.

Another case where Husqvarna has communicated around innovation is regarding their large investment in a highly automated chain factory in the city of Huskvarna. Rangert says the investment decision was taken five years ago and besides the construction of the factory, a new type of chain has been developed the last four years. In this case, several factors made Husqvarna disclose information, even though it was not on a technically detailed level. *“We had to talk about it early because there were many applications around construction and environmental permissions that needed to be filed. Since they are open for the public to read, it is better that the information came directly from us.”*. Another important stakeholder is the existing chain suppliers. *“There is a limited amount of suppliers in this business, around three to four that produce chains. We have to have an ongoing dialogue with them, revise contracts and maintain an overall good relation. They of course get concerned when we launch a project like this”*, says Rangert. The considerable size of the investment has furthermore required a dialogue with owners, according to Sätterström

4.2.3 Shareholders and market entry

Rangert thinks that the ownership structure of Husqvarna, with a few big holders, gives stability and long-term focus. He says that from an innovation perspective, the owners very seldom get involved in any details when to reveal information or how that should be done. Instead he perceives that they have good faith in what they are doing. *“Of course they are interested in our strategy but the execution of it is fully our task”*. Hallendorff agrees on this but mentions that Husqvarna, being publicly listed, still has higher demands on short-term results than for example Stihl, which is a family owned business. Typically, the board set a strategic direction that the development departments then create sub-projects in line with. *“I am not participating in the board meetings but I sometimes prepare material for them”*.

Rangert says he believes that it is difficult for the market to value novel innovation. For example, Husqvarna first introduced the robotic lawn mower in 1999 but it is not until the last two to three years it has reached a substantially commercial value. *“The stock market does not like uncertainty so it is during the recent years we mainly have seen a reaction on this”*. Husqvarna’s patent expired in 2012 and after that, the market started to grow quickly as competitors introduced their products. *“We had an advantage which was good but our competitors’ marketing efforts certainly helped us too. It is the same effect as Elon Musk and Tesla wants to achieve, by releasing their patents there will be more electric cars on the roads”*, Hallendorff says. Rangert has a similar reasoning and says that you should not always view competition as something negative when it comes to break-through innovations. *“As soon as other competitors start getting into the market and signal that they also believe in the idea, customers often tend to get more interested. Of course, you want to be early and in the forefront, but doing all by yourself can be grueling”*.

4.2.4 Standards

As competitors enter the new market, finding agreement on standards becomes important. After Husqvarna's patent expired, many competitors presented their own robotic model. Initially, there were problems with incompatible signals that disturbed other nearby machines, and a standard, therefore, had to be set to ensure compatibility. Hallendorff also mentions standards and regulations in other areas such as emissions, noise, vibrations, materials and that tough standards could be used as a competitive tool. *"This really helps a strong company like Husqvarna in keeping competitors out of the game and pushes the development forward"*. He says that the industry is facing tough regulations ahead and that Husqvarna has a department only working with compliance matters to prepare the company for upcoming changes. *"Sometimes companies are lobbying for stricter regulations when introducing a new technology they want to set as a standard. One example was the company John Deere who did this but it turned out that their technology did not work as intended, which in the end forced them to withdraw from the market. At the same time, we really had to make an effort to comply with the new standards"*.

4.2.5 Future trends of innovation disclosure

Hallendorff believes that openness is a future trend where external partnerships are going to be more important and prevalent, which naturally increases openness. *"We have been a very in-house focused company but today, our situation is much more complex than before and innovation is happening in many fields. We cannot be experts in everything"*, he says. Husqvarna has initiated something they call Supplier Enabled Innovation where they have targeted partnerships that they intend to work closely with. *"Partnerships require us to be more open and share our intentions with others"*. On the question if partnerships are difficult to manage, Hallendorff says: *"Yes, you have to have this as a working philosophy and not be too afraid of stating what you want to do and to do it. Partnership means that you have to let your partner in, not least when it comes to IP. If you are too strict, no one wants to work with you, which also is the case if you are too relaxed."* Today, Husqvarna is not conducting that many external projects with for example Vinnova and universities but this is definitely increasing according to Hallendorff. *"One example is a network called "Zero Vibration Injuries" where we work together with Atlas Copco among others"*.

Sätterström also notes a trend of future openness. *"The Chinese manufacturers are eager to speak loudly about what they are doing. So far, Stihl and us, being the biggest players do not do this to the same extent"*. He also mentions the increased complexity of innovation and that Husqvarna is looking at increasing external partnerships. *"The discussion is alive, looking at the chainsaw production we have been vertically integrated but I believe we have to work more externally if we are going to be innovation leaders in"*

integrating connectivity. For example, we have entered a strategic partnership with the battery manufacturer BMZ". However, working with external partners in the innovation process implies possible confidential issues means Sätterström. *"You have to decide what to share and not and sometimes you produce joint patents. We want to increase our partnerships but are still quite inexperienced. We talked last week about that we need to gain experience and adjust internal processes to run this in an efficient way"*.

4.3 SCA

“SCA is a leading global hygiene and forest products company that sustainably develops, produces, markets and sells personal care, tissue and forest products. Sales are conducted in about 100 countries under many strong brands, including the leading global brands TENA and Tork, and regional brands, such as Libero, Libresse, Lotus, Nosotras, Saba, Tempo, Vinda and Zewa. As Europe’s largest private forest owner, SCA places considerable emphasis on sustainable forest management.

The Group has about 46,000 employees. Sales in 2016 amounted to approximately SEK 117bn (EUR 12.4bn). SCA was founded in 1929, has its headquarters in Stockholm, Sweden, and is listed on NASDAQ Stockholm.” (SCA, 2017)

Table 6: SCA’s owner structure

SCA			
<i>Largest shareholders as of 2016-12-31</i>	<i>% of capital</i>	<i>% of votes</i>	<i>Board representation</i>
Industrivärlden	9.5	29.7	Yes (Pär Boman is Vice Chairman in Industrivärlden)
Norges Bank Investment Management	5.6	8.7	No
SHB Oktagonen Foundation	0.4	2.4	No

Respondents

Anders Gustafsson - *Global Brand Innovation Manager at SCA Hygiene Category*

Jenny Fäldt - *Global Research Director Absorption and Skin Health*

Charlotta Larsson - *Global Brand Innovation Manager at SCA Hygiene Category*

Michael Lövgren - *Key Account Manager for Tork and Easy Cube, Away from home*

Anders Elmqvist - *Vice President Finance and Business Development at SCA Global Hygiene Category*

4.3.1 Innovation disclosure strategy

All respondents agree that SCA, as far as they can remember, never have communicated about products not yet introduced to the market. Gustafsson says that *"as I can see, we do not speak of future innovations in a detailed manner, neither do we speak of it as concepts."* There seems to be no explicit strategy regarding innovation disclosure, but Gustafsson state that *"I cannot say I have a clear picture of how we do and how we want to speak about innovation. But I do know that there is a will to position SCA as an innovative company, especially in the fields where we are market leaders, in that way we can set the direction"*. However, the GHC (Global Hygiene Category) and the communications department have the practical responsibility to decide on what is communicated externally, and in what form it should be done, Lövgren explains. Furthermore, he thinks that a clear strategy regarding innovation disclosure is beneficial at a company of SCA's size. *"I am convinced that a strategy stating who should have the information and when it should be released would be of benefit"*.

Regarding that innovation can appear to be a trendy buzzword, Larsson says: *"Most companies wants to be innovative, the challenge is to come up with real innovations not only upgrades"*. Lövgren has the same experience, stating that *"we might throw around that word a little too generously. I believe that an innovation must truly change how we perceive or use a product. A big portion of what we develop today is done to protect current market share, what I would like to call "exploiting". A much smaller part is dedicated to "exploring", where you try to find new markets and needs, what I think is more of "true innovation"."* Elmqvist describes it as *"most of our innovations are of a continuous and incremental form, with a few being more disruptive, these often being related to connectivity or big data."* Even so, the market expects both yearly "facelifts" and more substantial innovations every second to third year for each product line.

4.3.2 Innovation at SCA and the industry

Regarding the market development, Gustafsson says that *"this is a subjective opinion, but I feel that it goes faster and faster. We are faster to reach the market and the marketplace itself is moving faster as well"*. According to Elmqvist, this speed has made the need of reaching the market before competitors of higher importance than before. *"We are secretive as long as we possibly can. It is basically not until the product is on the shelf that we start speaking about it externally"*, explains Elmqvist which also is further emphasised by Lövgren who says: *"We are afraid that our competitors will find out what we are doing"*.

Having previously been very engineer and inside out driven regarding innovation, SCA now make sure to identify the outside need first, setting up customer-centred innovation programs. *"The first stage in our*

stage-gate innovation model is feasibility, where we use the customer need/insight as a starting point, investigating whether the need is possible to meet technically. Parallel to the stage-gate model we also have the enabling process, where basic research is done on fields that can be applicable to several categories, such as skin care or absorption", says Gustafsson. He also states that SCA has worked hard during the last years to better connect the research department with the need of the brands. "I experienced that there, in the past, was some frustration in the R&D department, they felt disconnected and not listened to by the rest of the organization. But I have a feeling that by better connecting Research to the different brands, this feeling has lessened"

Even though the pace of innovations has increased, Gustafsson says that SCA, compared to other industries would probably be considered quite slow. *"One has to keep in mind that every company has their own innovation rhythm... and this rhythm is partly connected to the fixed investments".* SCA has high fixed investments in production, and innovations get costly due to the subsequently required upgrades of these facilities. Gustafsson further explains that *"if you work with apps you have little to no fixed investments, the only cost are the employees. On the other end, there is a paper factory with billions of SEK in investment and a depreciation time of 20-30 years. We must consider both our investments and our brand, while an app company only have the brand to worry about."*

4.3.3 New business areas

While most of SCA's innovation is in FMCG (fast mover consuming goods), they also have a few more tech-intense, breakthrough projects. Lövgren is working with the development of Easy Cube, an integrated information system created to improve efficiency for cleaners in facilities such as airports, offices, and schools. Entering the digital field has been new to SCA, and they have in this project adopted a much more agile way of working, integrating user stories and working with continuous improvement, also after the launch. Lövgren says that this new method of innovating *"makes it harder to handle the non-disclosure strategy compared to when launching, for example, a traditional dispenser, where the development and launch are two much more separated events".* When selling Easy Cube, Lövgren says that the methods have been very different from how SCA usually sell a product. *"In our conventional business, everything is very hush hush. If we are to launch a new blockbuster we want to enter the market with full strength, not letting any information seep out in advance."* Before launching Easy Cube, no information or pre-announcements were made about the product, which is line with the overall disclosure strategy in SCA. However, the product was not entirely developed when launched, but instead, SCA collected numerous user stories to further improve and develop the software. Lövgren adds that *"Easy Cube is different. The*

way we sell it is that on top of the existing technology, we invite the customer to join us on an innovative journey."

Lövgren emphasises the benefits of being a first-mover with a system such as Easy Cube, *"We can earn a lot by being first to market thanks to the great lock-in effects we can create"*. Even so, Lövgren admits that being first in the market is challenging as well. One example that Lövgren has experienced is the need to educate their Swedish clients. *"If we take Norway as an example, the market for these kind of systems is more evolved, and we have one competitor working with digital cleaning management in a somewhat similar manner as we do. Norwegian customers ask themselves: what system should we have? In Sweden, the question is still: should we have a system or not?"*

4.3.4 Internal communication and external projects

On the question of how openly innovation is communicated internally, Fäldt says that *"depending on where you are in the organisation we can speak more or less openly ... we might avoid talking about innovations and what is to come to the sales department, this to make sure they are not selling anything that does not exist"*. Also Lövgren, working in the sales department is aware of this risk, stating that *"the high secrecy towards the sales force is not really a problem, but when it is communicated that an innovation will come, it is really important that we stick to launch date! If we would know exactly what the next product would be like in an earlier stage, there is a risk that we start selling these products instead. Rather than involving us more in the last part of the innovation process, I think that our input and knowledge could be used more efficiently in the beginning of it."*

SCA is involved in several external research projects in different constellations, such as projects with both Swedish and foreign universities, an example being the SuMo biomaterials project with Chalmers. Furthermore, they are engaged in Vinnova projects, partnerships and research centers. Fäldt says that *"we work a lot externally. SCA have a relatively small R&D department compared to for example Astra Zeneca, so we have to work smart."* When answering the question on how the paradox between secrecy and transparency are managed within these external projects, Fäldt says that *"when entering an external research project, a lot is about trust ... in order to get the results we want, we have to lower our guard a bit"*. To protect themselves and their strategy, Fäldt explains that these external projects are about acquiring general knowledge and that there are internal projects, parallel driven, where this knowledge can be applied and utilised within SCA. Fäldt states that the research publications are a way of communicating externally and that she has to assess, for each publication, whether it is going to help the competitors more than it enhances the picture of SCA. *"For big competitors, the risk is not that big, they are often working on the*

same thing themselves. But small players might get a knowledge boost, which is a consideration we have to make. Sometimes we can publish parts in order to show what we can do, the driving force is to build trust and respect externally. These publications can also be used on launch in order to back our claims."

4.3.5 Targets of innovation disclosure

There are several targets of SCA's communication efforts around innovation. Gustafsson says that *"we want to communicate our innovative capabilities to different stakeholders for different reasons; To the customers so that they will buy our products, to the shareholders so that they give us a high valuation and to the employees to create confidence and a "go"."* Larsson says that the main target *"of course is the consumer, but also shareholders and investors, as well as making SCA attract the right kind of people and competence."*

Another important target, highlighted by Larsson and Gustafsson is customers and distributors. Well ahead of the launch date, the key customers and distributors, such as for an example ICA and Axfood in Sweden, are informed about the upcoming launches in order to secure shelf space and a successful launch to the market. Larsson says that *"while we are quite open with our key contacts for the main suppliers you still have to bear in mind that most customers are also working with Private labels in parallel"*. However, they carefully consider the balance of what to tell the customer in order to get the wanted shelf space, while still ensuring that the most prominent details of the products remain unrevealed.

Lövgren, having worked with strategy and business development, puts emphasis on the importance of communicating innovative capabilities to shareholders, *"how we position us as an innovative company and document the way we bring products to market is extremely important"*. Lövgren thinks that SCA has a history of taking good innovations to the market, but that they have been falling somewhat behind in leveraging it in their communication. For example, Larsson says that *"SCA is working actively worldwide about breaking taboos regarding feminine care and menstrual protection"*. Another aspect brought up by Lövgren is partnerships, *"Successful companies on the front edge want to work with other successful companies on the front edge, and to be successful you have to be innovative."*

Elmquist says that most of SCA's innovations, being of the incremental kind, are hard to create a story around, *"communication is difficult when the novelty and relative size of single projects is so small,*

compared to the overall sales". In line with this, Gustafsson states that SCA has a strategy to make use of their high-tech products in communication, being the TENA Identifi, a smart incontinence protection measuring the leakage and the Easy Cube. He exemplifies, "if you would look at the total revenue, Easy Cube have a very small share. But if you were to look at how we present ourselves at fairs and exhibition, Easy Cube plays a large role, and we often win prizes for the best showcase and so forth. In this case, we have been able to use a breakthrough innovation to create an innovative image of the company. I think services impress more and are seen as attractive, they create headlines". Larsson states that while details about future innovations are avoided, there are other ways in which SCA can profile themselves as innovative. As an example, SCA hold innovation lectures in universities, using their innovation funnel as a learning tool, hence also marketing the innovative capabilities of SCA to the students.

4.3.6 Shareholders and future trends

On the topic of shareholder pressure to communicate on innovation, Fäldt says that *"we have large owners with a long-term perspective, they allow us to do things a certain way. If for example, a hedge fund would have been involved, the short-term focus and the owner's pressure would probably have been much stronger".* Elmquist also mentions the long-term perspective of the owners, stating that he does not experience any explicit demands from the shareholders to disclose information about innovation. Elmquist says that Investor Relations have a cautious approach in their relation to analysts. If they make an innovation disclosure for period one, the analysts will expect a disclosure also in the next period and so on. *"We, as well as the owners, want to avoid volatility in the stock price, therefore we have to be very careful with what we communicate".* Elmquist feels that SCA have free hands and that *"there could possibly be questions related to the overall level of R&D spending, but none posed on project level"*

When discussing trends for the future, Fäldt argues that *"we will continue to speak and show our innovation capabilities, but I cannot see us talking about products and concepts earlier than we do today, it does not work."* Even though all respondents believe the secrecy level at SCA to be logic in regard to their industry, most of them believe innovation and the communication thereof to be of increasing importance. *"I believe that we in the future will see more of innovation... We have to stop our products from becoming commodities. If we want to keep charging, we have to innovate"* Larsson says. Gustafsson thinks that *"communicating innovation in order to enhance our brand and image will be of increasing importance".* Lövgren finishes his interview by stating that *"Innovation disclosure and communication regarding innovation is becoming more and more important, especially from a shareholder perspective. But in the end we also need numbers to support our claims so I believe in a combination of communication and getting results, that is what is really important".*

5. Analysis

This analysis aims to answer the overarching research question, *How do companies manage the dichotomy between transparency and secrecy in their innovation strategies?* This by combining the empirical findings and the theoretical framework presented in this study. The analysis is split into three parts, focusing on answering the respective sub-questions *a) How are companies strategies or operating policies regarding innovation disclosure formed?*, *b) How does the need of the stakeholders drive the voluntary innovation disclosure?* and *c) Are there any current trends identified, changing the way companies handle their strategies regarding innovation disclosure*

5.1 Strategy for innovation disclosure

The first section of the analysis concerns the first sub-question, *How are companies' strategies or operating policies regarding innovation disclosure formed?*

5.1.1 Company strategies

Neither of the interviewed companies states that they have an explicit strategy for innovation disclosure. Nevertheless, we perceive that the respondents within their respective case companies have a relatively coherent view in how innovation disclosure is managed practically and what level of secrecy they adapt. Here, a mix of tradition, unwritten rules and sub-strategies regarding IP-protection, product development plans and communication, jointly form an implicit strategy. In other words, the disclosure practices do not seem to be a separated strategy from the overall innovation process or communication strategy.

The most formal element mentioned in the interviews, directly related to innovation disclosure strategy, was the board decision at Volvo of becoming more open about innovation in general. Whether an explicit disclosure strategy would be beneficial or not is a diverging opinion among the respondents. At Volvo, Karlsson and Johansson are sceptical and believe there are too many eventualities to cover with a general strategy practically. On the other hand, Löfgren at SCA thinks that a strategy stating who should be targeted and when this should be done could be helpful.

All companies argue that the central approach of their practical disclosure processes is restrictive, mainly to avoid substantial proprietary costs. The level of secrecy and the reason thereof differs between the case companies, a difference we mostly believe to be a result of industry characteristics, even though strategies

can diverge within industries as well. We perceive SCA to be the most restrictive company within this study. SCA say that fierce and direct competitive reactions are a significant threat and a barrier to innovation disclosures in the FMCG-industry, in which they operate. Due to this, they do not communicate prior product launch, and their communication has a historical approach, focusing on already launched innovative products. This finding is in line with Eliashberg's & Robertson's (1988), saying that the often hostile responses in this industry make FMCG companies less likely to pre-announce. Nevertheless, SCA aim to mediate their innovative capabilities through other methods than disclosing not yet launched products.

Among the three case companies, Volvo is the most active in innovation disclosure. Datta et al. (2015) state that companies in high-tech industries are more likely to engage in partnerships and external research projects which, according to Mohr et al. (2009), drive pre-announcement and transparency. Listening to the respondents at Volvo, the industry is facing many disruptive changes, and there seem to be great possibilities of disclosing possible concepts of future innovations and emerging technologies. Hence, Volvo expressed the need of maintaining a cautious disclosure strategy which communicates a sound and well-balanced picture of the company while avoiding to create inflated expectations. The disclosure process at Volvo is to a large degree event-driven. The focus is that the communication towards all stakeholders needs to cohere which mainly is handled and facilitated through internal discussions in different working groups with support from strategic communication documents, however not exclusively written for innovation disclosure purposes.

Husqvarna can be argued to be located between SCA and Volvo in the balancing act between secrecy and transparency. A major threat from innovation disclosure expressed by Husqvarna is cannibalisation. Their business model of introducing new generations on a relatively fast basis, make customers more likely to postpone their purchases, a threat also brought up by Robertson et al. (1995). Therefore, they have chosen to be very restrictive in disclosing product related innovation information. They have an unwritten rule of not publishing any material regarding products in their catalogues before passing the "production gate" in their development process as a primary approach. However, the external communication on Silent City is an exception to their restrictive strategy, where Husqvarna has disclosed conceptual ideas at an earlier stage, relating to the trend of connectivity.

5.1.2 How to make a story

We have throughout the interviews noticed that storytelling seems to be an important element when making innovation disclosures. When innovation tends to focus on small, incremental projects, communication becomes challenging. For example, many innovations at Husqvarna are related to small technological

improvements such as optimizations of the chainsaw's chain, which is noticeable when using the product but difficult to build a communication case around. Another similar issue was discovered at SCA where innovation portfolio consists of many small projects, implying that single projects often are too small to communicate around when extracting them from a project level to a holistic context of SCA.

On the other hand, many respondents emphasize that innovation instead can be communicated regarding strategic direction or on a concept level, without revealing sensitive data or details. An example is the previously mentioned concept of Silent City, which has enabled Husqvarna to communicate more freely as this entails the overarching trend of connectivity. This is a technology field of increasing importance in their industry, similar to the examples of Easy Cube and Tena Identifi at SCA. Volvo also utilize concepts as a platform for innovation disclosure, particularly related to trends such as electrification, connectivity, and automation. One example is the real-life operating, autonomous truck in the Boliden mining site, used as a showcase for Volvo's innovative capabilities within the field of automation.

The findings of conceptual communication correspond well with the view of Jones (2007), who argues that innovation disclosures in early stages tend to be of descriptive and narrative nature, gradually shifting to more numerical and detailed information as the innovation enters the commercialisation stage. This corresponds to the view of Volvo, where innovation mainly is communicated in the early and late stage, while the need for secrecy is greater in between. Furthermore, high-tech companies tend to render bigger attention and increases in stock prices from early announcements, while other firms often need to wait longer with their disclosure before investors can incorporate the value from the innovation disclosure, according to Jones (2007). This could be an explaining factor of the difference between SCA's and Volvo's approaches.

Even though SCA do not disclose any information before launch, they state the importance of being perceived as an innovative company. To communicate this, they utilise other ways of talking about innovation. One way is the marketing around new, already launched, innovative products, such as Easy Cube and Identifi. While they do not reflect a significant portion of the total revenues, they represent a new way of working, incorporating servitization and connectivity in the product, which seems to be easier to communicate around than purely technological innovations. Moreover, their communication has given lots of attention to their innovation process, using that as a tool to market SCA's aggregated innovation capability. This has for example been communicated during lectures at universities.

5.2 Drivers for voluntary disclosure

To answer the second research question: *How does the stakeholders' need drive voluntary innovation disclosure strategy?*, this section takes a starting-point in the framework presented by Eliashberg & Robertson (1988). By identifying the drivers and barriers to pre-announcement, the stakeholders' need and influence upon the case companies' innovation disclosure strategies is exposed. This method is used to capture *what* stakeholders that matters and *how and why* they do so. To the drivers presented in the article, three more was added: *Reduce Agency Costs*, *Partnership* and *Public Funding and External Research*. These drivers were identified as concepts, both in the empirical findings and in the literature review, hopefully creating a complete picture of how stakeholders drive the need for innovation disclosure.

Table 7: Edited driving forces for Pre- and non-preannouncing companies

Driving forces for Pre-announcing	Driving forces for Non-preannouncing
<i>Reduce agency costs</i>	Cannibalization
Image enhancement	Competitive reaction
Distribution advantage	Inability to deliver
Demand stimulation	Antitrust concerns
<i>Partnership</i>	
<i>Public funding and external research</i>	

5.2.1 Non-preannouncing

5.2.1.1 Cannibalization

Husqvarna and SCA are afraid of sharing innovation pre-announcements internally with the risk of Sales starting to market the products too early. All respondents avoid talking to Sales too early since they see the risk that they will start selling what not yet exists, hence cannibalizing the sales of current products, a barrier brought up also by Robertson et al. (1995). In the cases of Volvo and Husqvarna, the planned purchases,

as well as the big generation shifts, makes this challenging. For SCA, the customer's need is more immediate, and purchases cannot be postponed. However, the end consumer may buy a competitor's products and the distributor might give more room to a competitor with "newer" products already in the market.

5.2.1.2 Competitive reaction

Robertson et al. (2015) bring up the fear of hostile competitive reaction as a barrier to pre-announcing. SCA claim that the fast moving and highly competitive landscape within the FMCG industry is the main barrier towards innovation disclosure, a claim supported by Eliashberg & Robertson (1988) who say that this industry is characterized by a fast and hostile counteraction. Also, Husqvarna say that it is not easy to communicate about products. Husqvarna has a competitive relation with their main competitor described as a cat-and-rat game, making them reluctant to disclose too much about what they have in the pipe. Nevertheless, they say that pre-announcements also work as a tool to put pressure on competitors, as Stihl did with their pre-announcement of the magnesium-pistons technology.

Furthermore, apart from hostility-signals in pre-announcements, mentioned by Eliashberg & Robertson (1988), we believe that technological advantage and development times for competitors (James, 2014) are important factors to consider when predicting the competitive reaction, like in the case of Stihl and their announcement of Magnesium pistons. Even though the announcement was relatively detailed, the fact that Stihl were already in a later development stage, testing the products on the field, made the announcement less risky. Husqvarna believes that Stihl made the analysis that it would take a good amount of time for competitors to develop the same technology themselves, hence decreasing the risk of a direct competitive reaction. In the case of SCA, the risk becomes higher due to shorter development cycles and less technological differences between the competitors.

5.2.1.3 Inability to deliver

At Husqvarna, Marketing and Sales often want to communicate innovation in an earlier stage than the R&D department. R&D sees the risk that not fully developed products will appear ready for market, therefore often holding back even though they understand the positive aspect from a brand perspective. Volvo say that it is important not to create inflated expectations among their customers which is a big reason to their restrictive position. It was also stressed that there is a need of giving precise information to the public regarding the maturity of their innovations, for example when showing a prototype. From their point of view, it is important to reflect a balance, both to shareholders and customers, showing that Volvo's

innovation efforts mainly revolve around diesel engines, even though they could showcase many exciting, futuristic concepts.

According to Eliashberg & Robertson (1988) Sorescu et al. (2007) and Hendricks & Singhal (1997), the fear of promising too much is a barrier to innovation disclosures and all respondents, more or less, share Sorescu's (2007) caution of early pre-announcements. However, several respondents witness a change, both from the customer and competitor side. For example, Volvo's customers have gained a better understanding and more realistic expectations regarding the maturity of the pre-announced technologies, and it is also important to distinguish between what can be perceived as a promise or not from a time perspective. Here, we have gotten the impression that companies now can be relatively bold in their statements, as long as the communication is formed regarding ambitions with a corresponding time horizon. Talking about innovations in a time span of five years compared to six months certainly result in different expectations.

Another field where promises or outspoken intentions can have devastating implications is the described example of Husqvarna's competitor John Deere, where their overambitious innovation disclosure towards legislators caused their subsequent market withdrawal. Eliashberg & Robertson (1988) argue that pre-announcements can be a useful strategy for market leaders to establish standards, and Crabb & Johnson (2010) mean that setting these standards require openness towards Governmental agencies. However, it is evident that companies need to be careful in managing these processes. Volvo emphasise the importance to be clear on how mature the technology is when communicating with legislative authorities, to avoid situations like John Deere ended up with.

5.2.1.4 Antitrust concerns

Neither of the companies stated any concerns regarding Antitrust issues of innovation disclosure. Antitrust can be seen as an extended issue of the previous section 5.2.1.3. *Inability to deliver*, the difference being an intended misleading purpose from the disclosing company. We could have gotten other responses if interviews had been conducted in Software companies, where the problem of "Vaporware" is more prevalent, according to (Prasad Mishra & Bharbra, 2001).

5.2.2 Pre-announcing

5.2.2.1 Reduce agency cost

As innovation in its nature is risky, unpredictable and idiosyncratic (Holmström, 1989), it is exposed to higher information asymmetry between managers and owners, compared to other activities. This asymmetry causes agency costs (Belloc, 2013) and according to this reasoning, the larger information asymmetry, the higher the risk of undervaluation from the shareholders. Jones (2007) and Healy & Palepu (2001) states that companies will make innovation disclosures voluntarily as a mean to reduce the agency costs.

The high concern for agency costs concerning innovation, stated in the theoretical framework, was not expressed by any of the case companies. Instead, they conveyed a sense of trust from the shareholders. One possible explanation is that all three companies have big owners with either Board seats or representation of some sort, which naturally give major owners a deeper insight into the strategic direction and investment decisions of the company, resulting in higher trust. In general, the respondents argue that while the owners are interested in the overall strategy, the execution is left to management.

Moreover, all case companies mentioned that their owners are there for the long-term, thus avoiding some of the pressure on short-term results referred to by Tian & He (2013). SCA said that their situation probably would look a lot different if they were owned by for example a hedge fund, which might not have allowed SCA to put money in basic research to the same extent as now.

While execution is left to management, shareholders acknowledge the value of innovation. Volvo have received a specific request to communicate innovation further, and SCA say that this communication is of increasing importance for the shareholders. However, in the case of Volvo, they argue that analysts and shareholders already have incorporated a certain level and speed of innovation in their share price projections. This means that an *absence* of innovation disclosure is punished, rather than rewarding a *presence*. According to SCA, they have to be careful when making disclosures since analysts will start expecting them to do this on a regular basis. If SCA would make an announcement in period one but not in period two, they believe that the share price will experience volatility, something both SCA and the owners want to avoid.

5.2.2.2 Image enhancement

Dahlander & Gann (2010) raise image enhancement as a factor favoring disclosure, which is confirmed by all three companies in our interviews. Although they state a restrictive disclosure strategy as their starting point, the importance of being perceived as innovative by different stakeholder groups is emphasised several times. While the article of Eliashberg & Robertson (1988) mentions shareholders as a target group you want to impress, our respondents also note that using disclosure is an important marketing effort towards customers, future employees and potential partner companies. At Volvo for example, a big part of Johansson's work is to create content for articles aiming to increase interest for Volvo among engineers, this by showing the latest technology. Furthermore, Husqvarna also mean that openness enhances the possibility of attracting future employees and SCA have held lectures at universities about their innovation process to raise interest among students. From a partnership perspective, SCA emphasise that successful companies with a strong image naturally want to collaborate with each other.

5.2.2.3 Distribution advantage

Creating distributional advantage is a driving factor for pre-announcing companies according to Eliashberg & Robertson (1988), as disclosures can prepare distributors and suppliers and encourage them to seek optimal solutions when companies are launching innovations. This is especially important when companies have insufficient resources to manage these processes alone (Dahlander & Gann, 2010). Many of the respondents mention distributors as important stakeholders in their disclosure practices, together with suppliers. Here, SCA stands out, having a complex situation with their distributors also being direct competitors, as Food chains have entered e.g. the diaper market with their private labels. This situation requires SCA to be careful in how they balance the information to make sure they get shelf space without revealing sensitive information and incurring proprietary costs.

Moreover, Husqvarna mention suppliers to be an important stakeholder regarding innovation disclosure. Both in maintaining established relations as in the case of the new chain factory investment where previous chain suppliers had to be informed about the plans, but also regarding the program called "Supplier Enabled Innovation." At Volvo, suppliers are one of the primary targets for innovation disclosure. The increased technological complexity seems to be a major factor of why actors in the value chain need to be involved in early stages, as the success of new innovations often is not limited to the innovator.

5.2.2.4 Demand stimulation

Looking at our respondent's answers and combining them with theory, demand stimulation clearly has both long- and short-term aspects. From a long-term perspective, innovation disclosure can help companies to

prepare and educate the market for disruptive innovations (Eliashberg & Robertson, 1988), significantly changing the industry. This is something Volvo work with as they often try to offer solutions and products the customer not yet know they want. In accomplishing this, there is an aspect of early letting customers become familiar with the new concepts. The entry of Autonomous vehicles is one such trend where both customers and society need time to adapt to laws and regulations as well as a general acceptance of the technology. Furthermore, Volvo note that many customer relations are based on long-term commitment where you need to convince customers that you are managing the technological shift, this to stay attractive as a business partner.

On the short-term, we have noticed that the factor of innovation disclosure seems to create some internal tensions between departments. As previously mentioned, Marketing/Sales at Husqvarna would like to communicate innovations on new products early to spur sales, which, however, does not come without problems of cannibalization and the risk of promising too much, according to R&D at Husqvarna. At Volvo, the situation is the opposite. Previously, the Brand companies had a lot of power in deciding when to reveal information, often wanting to hold back on information to avoid depleting selling arguments prior launch. But as of the strategic change directed by the Board, Volvo now communicate around innovation earlier. According to Eliashberg & Robertson, (1988), an advantage of early disclosures, opposed to the risk of depleting selling arguments, is the possibility of customers postponing purchases from competitors if the disclosed innovation seems attractive. This trade-off discussion is brought up by Volvo, arguing that they may win customers if they convey an image that their upcoming products will be superior to competitors'.

We believe a decisive factor of how to strategically think regarding innovation disclosure and demand stimulation has a lot to do with demand characteristics. Can the customer postpone the purchase, e.g. a truck, or is the demand crucial to satisfy directly, like in the case of SCA's products? Also, for how long is the customer stuck with the purchase? Even though other aspects influence the decision of whether or not to disclose, this could be a reason of why SCA is more restrictive compared to Volvo and Husqvarna. In other words, in markets where demand tends to be acute as it occurs and the product has a shorter lifespan, companies seem to have fewer possibilities of influencing customer's purchasing behaviour by early innovation disclosures. Furthermore, another important aspect can be the timing of the disclosure and have insight in your competitor's' development cycles. Knowing approximately when their product generation shift is about to be presented can help decide if and when to announce, to gain effect from an early disclosure, aiming to spur demand.

Dahlander & Gann (2010) argue that early pre-announcements can be a viable strategy when companies do not have sufficient resources to enter a market on their own. Shilling (2005), also notes that first-movers often carry higher costs in the longer run. Being first to market with new innovations certainly has its advantages, according to some of the respondents, but can also create difficulties. In the case of Easy Cube, there are possibilities of creating lock-in effects as customers commit to a system for a longer period. Nevertheless, SCA say that the introduction has not been frictionless since there has been a need for educating customers. Comparing Sweden and Norway, the Norwegian market of these systems has evolved quicker with the presence of another major competitor. In Sweden however, the customers are still to a larger extent discussing whether or not they should invest in a system and not which type of system.

There was a similar situation for Husqvarna's robotic lawnmower. Even though it got introduced in 1999, it was not until the patent expired in 2012 and competitors entered the market that it started to grow substantially. As more players enter a market, they argue that there is a signaling effect towards customers, increasing the interest for the product segment. While being in the forefront is valuable, competitors have not only been something negative for their introduction of this break-through innovation. It should be mentioned that neither SCA, nor Husqvarna used the strategy of early disclosures to overcome the problems of being first to market, but we clearly see the theoretical link regarding the problem driver.

In 2012, when the patent expired, Husqvarna had valuable experience and technological knowledge, giving them the possibility to influence and engage with competitors to set standards for electric signals, to avoid lawnmowers from different manufacturers to disturb each other, something that happened initially. According to Kano (2000), early stage collaboration is a favorable way of ensuring compatibility of systemic innovations. In this case, Husqvarna had been alone in the market for more than ten years. Hence it was the entering competitors that could have ensured compatibility before launching their products.

5.2.2.5 Partnerships

The increased acknowledgment and interest in state-funded research and collaborative networks, reported by Schilling (2005), is also communicated by all the case companies. Volvo say that their industry has become much more complicated and that they no longer can or want to be experts at everything, instead utilising partnerships and networks. This is in line with Schilling (2005), who argues that companies' focus should be on developing their core competencies. Also, Husqvarna state that the increased complexity has made the company initiate several collaborations, something which is new for the formerly very in-house oriented company. When engaging in partnership, Husqvarna argue that they must be more open and not too afraid of sharing their innovative intentions. They say that entering a partnership involves letting

someone in, not at least when it comes to IP and if you are too strict, no one will want to work with you. SCA agree that engaging in partnerships entails letting your guard down a bit, which corresponds to Volvo's notion that the less you share, the less you will receive. However, it is stressed that the level on which you share information is a trade-off and must be formalised before entering the partnership, most often with Non-Disclosure Agreements to third parties.

According to Mohr et al. (2009), partnerships will increase pre-announcement, both as a result of working together and as a mean to attract partners. The latter factor was brought up both by SCA and Husqvarna, saying that by communicating innovative capability they will be more attractive to partner up with. Apart from these two reasons, Volvo state that the mere engagement in a partnership or public project results in a sort of pre-announcement, signaling what strategic research areas Volvo are focusing on, thus something they have to take into account when choosing their projects. Datta et al. (2015) argued that companies in high-tech industries are more likely to use networks in their innovation strategies, this since they cannot have all capabilities in-house. This is in line with our findings, where Volvo Trucks, being the most high-tech of the respondents, put the most emphasis on the need of external knowledge.

5.2.2.6 Public funding and external research

The increased complexity mentioned by all the companies have, according to Volvo, also been acknowledged by the government, offering public innovation funding via agencies such as Vinnova in Sweden. Since Vinnova's projects are governmentally funded, there are specific requirements of transparency to allow other actors and stakeholders to take part of the results (Vinnova, 2015). When Volvo initiate these projects, they say that the details of what to share are decided in the starting phase of the projects, where IP Protection and the Legal Department are involved. The degree of transparency in the projects differs both within and between the companies, treated case by case. Volvo are sometimes engaged in Vinnova-projects with competitors where the data is fully shared, and the challenge then lies in being able to utilize the data in the most efficient way to create customer value and get first to market.

Moreover, for Volvo, the public innovation projects fulfil also another purpose, namely being the primary source of content for innovation disclosures. Due to the transparency demands posed by the funders, these projects will have to be open to some extent. This "forced" openness is then being utilised as a source of communication, while the in-house projects can remain fully secretive. This strategic approach of using public research projects for innovation disclosures has not been found in the literature review but is an interesting aspect of how public innovation projects can facilitate and promote innovation disclosure.

Today, Husqvarna's innovation portfolio consists of few publicly funded projects and university collaborations, but they state an ambition to increase their engagement. SCA is, on the other hand, engaged in several research projects together with Universities and Research Centers. Most of the research is on a basic level, not revealing much information about the practical application of the findings. Generally speaking, for both SCA and Volvo, is that the research areas being pursued externally are referred to as well-known, self-evident and *something that everyone does*. SCA state that the big competitors often tend to work on similar areas hence is the proprietary cost not as big for external projects in these areas. However, the small players might benefit more from their publications by knowledge leaping. SCA also have a strategy where external projects are matched with internal, closed ones, managing the more sensitive application part of the innovation process.

SCA have a relatively small R&D department, implying a need to be smart and collaborate to get knowledge and innovation. Dahlander & Gann (2010) list access to external resources and knowledge as a driver for collaboration and subsequent pre-announcement, which is in line with the empirical findings.

5.3 Trends

This section will concern the last sub-question, *c) Are there any current trends identified to change the way companies handle their strategies regarding innovation disclosure.*

5.3.1 The importance of innovation

Innovation is, according to Datta, Mukherjee & Jessup (2014) and Bellora & Guenther (2013), a significant factor for companies' success. Although Innovation can be seen as a buzzword, all three companies expressed a strong emphasis on its importance, both from an output and image perspective. They report that shareholders, customers, and future employees, etc. are all interested in innovation and do have growing expectations on the companies. Here, we perceive that the companies have similar goals, to be innovative, but different pre-conditions, especially evident in their ability to disclose. An issue for SCA, is that their innovative products generally attain less interest among the public compared with e.g. the automotive industry. For Husqvarna, many product-development areas focus a lot on incremental changes, making the communication difficult. Hence, the respective strategies of innovation and disclosure policies differ. Compared to Volvo, SCA is very restrictive regarding non-released products and technologies but rather communicate around internal capabilities and already launched products.

Although the innovation disclosure practices are or have been, cautious, a trend towards more openness can be seen among all the respondents. Exactly how and what shape this openness will take is not specifically answered, but the respondents note a change in both practices and expectations around innovation disclosure. This is especially noticeable at Volvo in accordance with the formal decision of becoming more open, taken by the Board.

5.3.2 Future drivers of innovation disclosure: increased complexity and partnership

Among the companies in this study, one of the major driving forces for this change is the increased technological complexity, also expressed by Gassman (2006), often linked to major trends of electrification, connectivity, automation, and digitalization. This complexity spurs the need for external knowledge to integrate new and advanced technology. Many respondents raise the fact that companies cannot be experts in everything and therefore need to seek help from others, which is also acknowledged by Schilling (2005). According to the respondents, the strategy to meet this trend is often to find different forms of partnerships with other companies, universities and Governmental agencies, which naturally increases information sharing. This view is supported by Dahlander & Gann (2010) and Datta et al., (2015), who argue that the trend of Open Innovation requires companies to involve more stakeholders in the innovation process via collaborative networks. An example from the interviews of such a network is "Zero Vibrations" where Husqvarna is participating with Atlas Copco among others. All case companies state an ambition to engage in more partnerships, believing it to be the way forward.

Recurring in the interviews is also that other stakeholders such as Governmental agencies will be of increasing importance to include. This has to do with issues spanning from legal barriers, complementing infrastructure to research funding. When entering partnerships and networks, openness, as discussed earlier, serves the purpose of accessing each other's knowledge, but also to market yourself as an attractive partner.

The development of new, emerging technologies put the companies in situations where they enter new, unexplored fields and markets. In line with this, Gassman (2006) argues that industry borders change and/or fade out. In our study, this can be seen in e.g. the introduction of Easy Cube, where SCA, traditionally being a producing company, has broadened their business by complementing their offer with digital services. For Husqvarna, a similar situation is occurring with their Silent City concept, and they are also facing a big shift from petrol to battery-driven engines in parts of the product range. Therefore, a partnership with the German battery producer BMZ has been established to meet the change. This is in line with Gassman's (2006) reasoning. Moreover, Eliashberg & Robertson (1988) argue that technological shifts and new

innovations may require companies to prepare the market for the change in case there are learning barriers to overcome, an issue mentioned by several respondents.

More daring announcement from competitors was another possible explanation of the trend towards increased openness, especially at Volvo and Husqvarna. The impression from the interviews at Volvo is that they traditionally have been reactive in their announcement strategy, where Mercedes were mentioned to be more active and bold. The example with MAN and their pre-announcement of the full-electric powered trucks also illustrates the change in the truck-industry in that regard. Furthermore, Stihl's announcement on their Magnesium pistons was also surprisingly open according to Husqvarna. Looking at these two announcement cases, Man and Stihl both stressed their competitors according to Volvo and Husqvarna, but without revealing that much sensitive information. The example of Stihl could be explained by the reasoning of James (2014), arguing that a technical advantage and long development cycles for competitors decrease the risk of high proprietary costs from a pre-announcement.

In the case of MAN, electrified vehicles are one of the overarching development areas in the truck industry, being a self-evident strategic research field for most of the truck manufacturers. Communication on a general level does therefore not imply any substantial secrecy issues or risk for proprietary costs, as long as no technical details are revealed. Volvo even pointed out that *not* communicating about these technological shifts can harm the company. The distinction is clear that both Volvo and Husqvarna prefer to form their communication on innovation around these industry-common technology fields, rather than areas where they believe themselves to be first movers. We have not found any specific theoretical support regarding the choice of disclosure areas but believe this is logic reasoning by the companies.

Both Husqvarna and Volvo believe they will disclose more information in the future. SCA emphasise the importance of innovation and that they will continue to work on communicating an innovative profile of the company. However, they do not see any upcoming change in the way they communicate around their products; it is simply not possible to disclose product related information prior launch in their industry.

6. Conclusions and managerial implications

6.1 Strategy for innovation disclosure

We can conclude that none of the three case companies has any explicit strategy for innovation disclosure, but rather implicit ones. Industry characteristics seem to be the main deciding factor of the general possibilities for innovation disclosure, and the operating policies are often formed ad-hoc, based on a mix of culture, unwritten rules and sub-strategies. Here, both theory and the empirical findings correspond in that the FMCG-industry, where SCA is present, generally has difficulties to disclose product related innovations due to subsequent fierce, competitive reactions. While companies in high-tech industries have greater possibilities and incentives for innovation disclosure, this is also reflected in Volvo being the most active with Husqvarna as number two out of the three companies in this study.

6.1.1 Managerial implications

Whether companies should form an official strategic document for innovation disclosure is difficult to answer, based on the interviews and insights from this thesis. We understand the respondent's arguments, both favoring and disfavoring an explicit strategy, and it certainly comes with its challenges to practically form one. Nevertheless, it is our conviction that companies would benefit from formally discussing innovation disclosure, to internally agree on an overall approach. As we perceive it, this is an important topic from a managerial perspective since there, in particular cases, are major advantages of disclosing, but also significant risks of mismanaging the process.

As a starting point to form a strategy or engage in discussions to learn more about how to work with innovation disclosure, companies can focus on analysing the three questions stated below:

- What industry characteristics are favoring or disfavoring innovation disclosure?
- What image does the company want to convey and what role has innovation disclosure in this?
- In what technology or business areas can the company disclose information without incurring too big proprietary costs?

6.2 Stakeholders' need as a driver for innovation disclosure

Furthermore, the study shows that many stakeholders are relevant to target with innovation disclosure, several of them for different reasons. For some stakeholder groups, e.g. future employees, partners, customers and shareholders, innovation disclosure tends to focus more on image enhancement while it for suppliers and distributors, can serve more practical aspects in the development and commercialisation stage of new innovations. Governmental agencies play a significant role, partly for legal issues but also for funding of research projects. While external funders provide companies with resources for R&D projects, they also state requirements of openness regarding the results, sometimes with direct competitors. Furthermore, the signaling effect of just entering a project is also something that needs to be considered, since this reveal information regarding prioritised R&D-areas.

Looking at information asymmetry, shareholders are an important group but to a significantly lower degree for the three case companies than theory suggests. The explaining factor we have found regarding this is that all companies have a few large owners, most of them with representation on the boards; This increase owners' insight in strategic decisions, naturally decreasing information asymmetry and the need of disclosures towards this stakeholder group. There seems to be a trust in that these three companies manage their respective innovation activities in a satisfactory manner from a shareholder perspective.

Proprietary costs occur when competitors get access to innovation-related information they can utilise in one or another way. This stakeholder group is therefore always in focus. Depending on the competitive landscape, the level of proprietary costs varies. Knowledge advantages over competitors and long development cycles of new technologies are two factors decreasing the risk of competitive loss when disclosing information. Furthermore, focusing disclosures to industry-common technology areas, where several players focus their innovation efforts, is another way of decreasing the level of proprietary costs. Listening to the respondents, we get the perception that there are benefits of innovation disclosures that quite easily can be gained without risking too much. Different industries certainly have different possibilities of innovation disclosure, but all three companies in this study have found their own approach to this. Several respondents emphasised that there are possibilities of forming communication on a general level, or regarding strategic directions, without including sensitive details, and both Husqvarna and Volvo have given examples where competitors and themselves have been relatively open.

Table 8 below, shows the identified stakeholders from all conducted interviews at the three case companies, summarized by the driving and non-driving forces of innovation disclosure from the theoretical part. They are not weighted by any sense by the respondents but rather serve as an overview of the stakeholder perspective of innovation disclosure.

Table 8: Matrix of the identified stakeholders and driving forces

	Identified Stakeholders								
	Analysts	Competitors	Customers	Distributors	Future employees	Government	Partners	Shareholders	Suppliers
Driving forces for Pre-announcing									
<i>Reduced agency costs</i>	X							X	
<i>Image enhancement</i>			X		X		X	X	
<i>Distribution advantage</i>				X					X
<i>Demand stimulation</i>			X						
<i>Partnership</i>							X		
<i>Public funding and external research</i>						X			
Driving forces for Non-preannouncing									
<i>Cannibalization</i>			X						
<i>Competitive reaction</i>		X							
<i>Inability to deliver</i>			X			X		X	
<i>Antitrust concerns</i>						X			

6.2.1 Managerial implications

We believe there are substantial advantages of targeting several stakeholder groups with information, and by selecting the right projects, primarily in technology areas challenging all players in the industry, interesting stories can be told without revealing details leading to significant proprietary costs.

When forming a strategy or increasing the knowledge around innovation disclosure, we propose that companies should map their stakeholder and think about which of them to prioritise and what type of disclosures to target the respective group with. Depending on the target group, the communication can be adapted, both regarding preferred medium, layout and content.

6.3 Trends for innovation disclosure

When asked about the future, all respondents say that the degree to which they perform innovation disclosures and/or talk about innovation are likely to increase. The main driver identified is increasing technological complexity, affecting innovation disclosure in several ways. Both the empirical and theoretical findings highlight that complexity makes the importance of partnerships and external projects

bigger, requiring the companies to become more open, both to gain benefits from the partners and as a mean to attract them. This openness is observed both within the case companies, but also from their observations of competitors, who are making bolder disclosures than what previously has been praxis.

Moreover, there are specific areas in which the technology is shifting more radically, being innovation areas such as electrification, connectivity, digitalization and servitization. Evident from all the case companies is how these areas are beneficial to disclose around, both since they feel that *everyone* is engaged in them, but also that they can be communicated around in the form of concepts, thus avoiding high proprietary costs. For these big shifts in technology to happen, change is needed, both in legislation and customer behaviour. To facilitate this, collaborations and disclosures are means to prepare stakeholders such as customers, suppliers/distributors and government.

6.3.1 Managerial implications

According to the findings of this study, the complexity will most likely continue to increase, probably having great implications on the innovation strategy of companies. We believe it to be important to thoroughly investigate what trends are most likely to influence the industry, and what implication this will have on the innovation strategy and innovation disclosure practices.

- Will the company require more partnerships to get access to knowledge? If so, how will the partners be attracted, and how will the results of the partnerships be shared?
- Will the company require access to public funding? What innovation areas is the company comfortable to show they are engaged in? How shall the findings be appropriated?
- Will the new technologies require learning or market preparation? Can the company pre-announce towards customers? How can the company prepare the government for future changes in legislation?

7. Recommendations for future research

This study was done in a relatively unexplored field, and there are many sub-areas in which future research could be conducted. The industry aspects proved to be important in the case companies' choice of innovation disclosure strategy, why we believe a similar study looking into other industries would be rewarding. An example that is brought up, both from the interviews and theory, is the software industry, where the pace is even faster, and terms such as "vaporware" make pre-announcement something worth looking into. Also, the pharmaceutical industry with its characteristics of defined R&D stage-gates would be interesting to investigate from an innovation disclosure perspective.

Since there have been several quantitative studies performed, aiming to review the effect on share price from pre-announcements, we believe that the qualitative approach could be advantageous to utilise further in this subject. The research method of interviews chosen in this study could also be mixed with other methods for triangulation, a suggestion being to also look at historical innovation pre-announcements, a method the scope of this study did not allow for. Furthermore, while this study aims to understand voluntary innovation disclosure from a management perspective, other stakeholders could be just as relevant. By interviewing financial analysts, their valuation and perception of pre-announcements could be derived. The trend towards partnership and publicly funded projects is another theme, where for example representatives from Vinnova could be interviewed to examine how they perceive the trade-off and what measures they use to manage it.

Another factor that due to the limited scope has been largely left out in this study is the role of IP for innovation disclosure. Is there a correlation, and if so, to which degree is the innovation disclosure strategy of a company correlated to its IP strategy? Or are both a symptom of the industry in which they operate in?

Since this is a qualitative case study, no attempts have been made to rank the importance of the different drivers and stakeholders, something a quantitative study could aim to do. While the Eliashberg & Robertson article from 1988 took a somewhat similar approach, a newer study would be favorable, being able to capture the new trends brought up by the case companies, such as digitalization and increased partnership.

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9. Appendix

Interview guide

We are interested in investigating innovation disclosure in your company, referring to the pre-launch, external sharing of information regarding an innovation.

1. How would you describe innovation in your industry?
2. Can you describe the innovation process in your company?
3. Does your company have a stated strategy regarding disclosure of innovation? If or if not, please elaborate.
4. Which external stakeholders are primarily targeted by innovation disclosures in your company?
5. In the context of your company, how do you perceive the paradox between being open and informative about innovation while at the same time ensuring enough secrecy to protect the ideas from imitation?
6. What do you believe is the purpose and key drivers to innovation disclosure in your company?
7. Who would you consider has the mandate of deciding what to disclose and communicate around innovation related information?
8. Can you describe a fictive or real example of the process of disclosing an innovation in a detailed manner?

9. How does the final information look like? Possible factors of interest:
- Timing of disclosure
 - Future or historic focus
 - Narrative or financial format
 - Communication channels
 - The quality and richness of the information
10. Can you describe the ownership structure of your company and whether you think this structure has any specific implications on innovation?
11. Bearing in mind that listed companies publish quarterly reports, to what extent do you perceive that financial analysts and credible institutional owners incorporate long term innovation in the short term pricing of the company?
12. How do you experience the need of control or monitoring from investors regarding innovations? How “free are your hands”?
13. Can you give examples or thoughts about internal tensions regarding innovation disclosure?
14. Do you have any future outlooks or additional thoughts on the subject?