How two global companies co-create innovations

Mathilda Lund and Frida Nilsson

Abstract

Title. How two global companies co-create innovations.

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Purpose. The purpose of this study is to investigate how Company X and Company Y are co-creating innovations at Innovation Center X. We want to enable Company X to realize and take advantage of the opportunities that evolve through their co-creation with Company Y.

Methodology. To answer our research question a qualitative research strategy was chosen. Since we wanted to describe the co-creation and the innovation process from the view provided by the staff at Innovation Center X we conducted a single case study. The data collection for our single case study was based on primary data from semi-structured interviews with the employees at Innovation Center X, and secondary data through a literature study. Furthermore, the present study involves an abductive way of doing research since we test our empirical foundation, primarily from interviews, towards existing theories.

Conclusion. In this study, we have identified that Innovation Center X facilitates co-creation between Company X and its customer Company Y and it allows for the two companies to benefit from brief interactions and knowledge- and information sharing, which can lead to co-creation. At Innovation Center X there is a goal of doing one project together (which is our definition of co-creation). This is the only incentive we have found when it comes to doing a project together (with people hired by respective company). Only occasionally do the project teams consist of representatives from both companies, since there is an imbalance of people in terms of which company they are hired by. Furthermore, project team set-up is a matter of combining the right skills, interests, knowledge and passion, rather than combining teams based on diversity. Innovation Center X is set up in a way that provides Company X with a 'seat at the table', therefore, co-creating activities are not prioritized, and no BU from Company X is involved in the projects at Innovation Center X.

Key words. Co-creation, collaboration, innovation management, innovation process, new product development.

Preface

Throughout the research process we have increased our knowledge within the chosen field of innovation management, co-creation and innovation processes. We have been able to dig deeper into these subjects by performing a literature study and interviewing employees at Innovation Center X. We have learned and experienced much and the work process has been very rewarding.

We would like to thank our internal supervisor Johan Brink, at the School of Business, Economics and Law at Gothenburg University, and our external supervisor Erik Josefsson for good feedback and discussions during our research process. Lastly, we want to give a special thank you to the employees at Innovation Center X for allowing us interviewing them and for providing us with a great work space.

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How two global companies co-create innovations in an innovation center

- *A case study on the co-creation between AT&T and Ericsson at AT&T Foundry in Palo Alto*

This thesis is submitted to the School of Business, Economics, and Law at Gothenburg University (Vasagatan 1 P.O. Box 600 SE-40530 Gothenburg). The thesis is equivalent to 20 weeks of full time studies.

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1. Introduction

This introduction begins with the background of the investigated subjects: innovation and co-creation. The background ends with a presentation of the companies that constitute the foundation of this study, and is followed by a problem description and thereafter the purpose and research question are addressed.

1.1. Background

The global market competition is intensifying because of dynamic market structure, differing market conditions and disruptive competitors. Due to the intensifying competition, innovation is the key to success and the foundation of the global competition (Dereli, 2015). In many industries the most significant factor driving firm success is the ability to develop new products quickly, efficiently and effectively (Schilling, 2013). The telecom industry is an example of this, where more competition has led to greater innovation activity and telecom companies are facing a need of innovating on a daily basis (Bohlin, Brousseau and Hultén, 2001). The need of innovating continuously is partially an outcome of globalization and partially of the fast speed of business competitors. Therefore, companies need to have a continuous flow of ideas and pay attention to the early stage of the innovation process, which is impacting the success and costs of innovation. To innovate successfully and gain competitive advantage, a company needs to have an ability to provide and implement more and better ideas than its competitors (Björk and Magnusson, 2009).

Innovation can arise from different sources; it might appear from a lone inventor who works on an innovation based on her or his needs or it may originate from research within or between organizations, as for example incubators, laboratories or universities (Shilling, 2013). Kazadi, Lievens and Mahr, (2016) claim that innovation is rather an outcome of the combination of different knowledge, resources and capabilities, from the various actors in an innovation network, than of individual work. This combination is increasing in importance as the complexity of products and services increase. Co-creation is something undertaken by AT&T and Ericsson, which are the companies that constitute the foundation of this study. AT&T is one of Ericsson's largest customers and this study focuses on how Ericsson and AT&T are co-creating innovations at AT&T Foundry, Palo Alto, California. AT&T Foundry is an innovation center owned by AT&T, and sponsored by Ericsson (AT&T Foundry, 2015). AT&T is a communication company and is world leading in its field. It offers advanced and

powerful global backbone networks and its business idea is to connect people through high-speed Internet services, advanced mobile services, and next-generation TV (AT&T, 2015). The sponsor, Ericsson is a world leading company within the communication technology industry. The goal for Ericsson is to make it easy for people to communicate all around the globe by providing telecom services, communication networks and support solutions. Innovation is the foundation for the company's competitiveness and the key to its future success. Hence, innovation is the foundation for Ericsson's culture (Ericsson, 2015b).

There are several AT&T Foundry innovation centers across the world. Ericsson is sponsoring AT&T Foundry, Palo Alto, but the other innovation centers have different sponsors. These innovation centers are collaboration and innovation centers where the purpose is to deliver services and applications to customers in a fast pace. The projects performed there are focusing on combining technical, business and design resources, which typically involve innovators, startups, academics, entrepreneurs and investors (AT&T Foundry, 2015).

1.2. Problem description
In a world where everything is being connected, the data speed increases exponentially and so do the possibilities for new innovations (Ericsson, 2016b). The technology development, which before could take years, now has to speed up and can only take months. Rapid ideation, prototyping and commercialization is critical to capture new market opportunities (Ericsson, 2016a). Ericsson early identified the need to innovate faster and co-create with its leading customers. Therefore, Ericsson engaged as a sponsor, at AT&T Foundry in Palo Alto. The innovation center creates an opportunity to quickly co-create innovations with one of its largest US based customer: AT&T. At the moment Ericsson is facing a challenge in how to scale and replicate this concept of co-creating with its customer. Ericsson needs to take learning in how to co-create with their customers in an AT&T Foundry set-up.

1.3. Purpose and Research Question
The purpose of this study is to investigate how Ericsson and AT&T are co-creating innovations at AT&T Foundry. We want to enable Ericsson to realize and take advantage of the opportunities that evolve through their co-creation with AT&T. Our hope is to make it possible for Ericsson and other companies in the same situation to benefit from discussion and conclusions made in this case study of AT&T Foundry. In order to identify these co-created opportunities, we will use the following research question:

How do two global companies co-create innovations in an innovation center?

- *A case study on the co-creation between AT&T and Ericsson at AT&T Foundry in Palo Alto*

1.4. Delimitations

This is a case study of AT&T Foundry; hence our findings are primarily limited to this specific context. Because we are focusing on an innovation center where a vendor and its customer are co-creating, we only describe one of many ways to co-create innovations.

AT&T has several AT&T Foundry innovation centers, however this study is focusing on AT&T Foundry only. Hence our findings and conclusions are limited to this context only.

A subject which we do not stress in this thesis is ideation. When mapping out the innovation process at AT&T Foundry, it starts with an *idea* and we describe that there are several sources of emergence of ideas. However, we do not go into depth with the process of ideation, neither do we examine the different sources of emergence of ideas.

Furthermore, in this study we do not investigate what happens to the innovation after it has been handed over to one of the BUs at AT&T (see fig. 10).

1.5. Definitions

The boundaries between collaboration and co-creation are vague, therefore we have defined how we use the two terms throughout this study:

Collaboration - In this study we refer to collaboration as brief interactions and communication (such as knowledge sharing and giving each other feedback on new ideas), and general discussions. All which might affect the relationship between parties. We agree with Sacramento, Chang and West (2015) who explain that collaboration is not limited to a specific level, it can take place between different parties such as between teams, between individuals and between organizations.

Co-creation - In this study co-creation is about doing a project together. It is about involving external stakeholders that contribute to the innovation process. We further agree with Kazadi, Lievens and Mahr (2016) that a feature of co-creation is that a company can combine the best

core competences or skills and resources with one or more organizations to become more competitive. More specifically, co-creation in this study refers to staff hired by AT&T doing a project together with staff hired by Ericsson.

Innovation - A widely used definition of innovation is the implementation of a new or significantly improved product or process, marketing method or a new organizational method in workplace organization, business practices or external relations (OECD, 2005). Innovation involves the generation of new ideas and implementation of the ideas into new products, services or processes (Schilling, 2013).

Disruptive innovation - Christensen (1997) describes disruptive innovation as a result of a worse technological product performance compared to existing technologies. The products are typically smaller, simpler, cheaper and more convenient to use, which as a start, provides low margins and little profit. Disruptive innovation is initially inferior to the mainstream technology in regards to performance. In an early stage of development, the product that is based on disruptive technology might only serve a niche market segment since the product has non-standard attributes (Yu and Hang, 2010). Disruptive technologies often make way for new markets to emerge since disruptive innovations must have different attributes of performance, compared to existing technologies (Christensen, 1997).

Abbreviations
BU - Business Unit
R&D - Research and Development
VC - Venture Capitalist
VP - Vice President

2. Theory

Through this research we want to find out how two global companies co-create innovations. We therefore decided to map out the innovation process of AT&T Foundry, to investigate how it is managed and ask questions regarding the co-creation activities. This would help us understand how projects are being executed and how the two companies are managing innovation together. In order to do that we needed a foundation and a theoretical understanding of co-creation and innovation processes. A literature study starting with the importance of innovation and co-creation therefore took place. This has led us into research in the topic of innovation management. The innovation management field is broad, hence we started off by studying course literature, which pointed out a direction for what additional literature to study. Parallel to the empirical study we identified other processes and disciplines important to our study such as the customer development process and design thinking. Figure 1 describes our theory selection and displays how each topic has led us to the next.
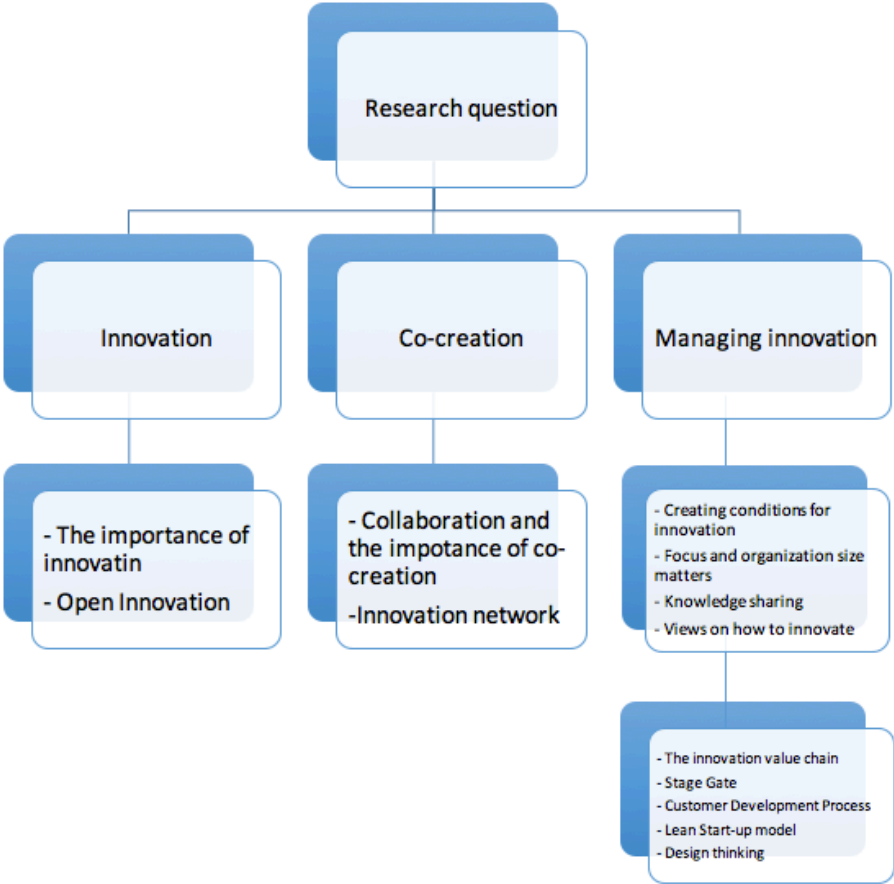
Figure 1. Theory selection

2.1. Innovation

This first theory section explains the importance of innovation. It is relevant to this study to understand why and how innovation can lead to competitive advantage. Further, because we are performing a case study at an innovation center where two companies have opened up the boundaries of their firm, we found it essential to discuss the topic of open innovation.

2.1.1. The importance of innovation

The ultimate reason why firms innovate is to increase performance (OECD, 2005). Innovation can be an important factor for growth of a company or the national economy (Schilling, 2013). According to Limberg (2008) innovation is a fuel for long-term growth and value generation. A sustained innovation is a function of differentiation strategy for companies to sustain performance in its competitive markets where innovative solutions are easily copied. Therefore, innovations cannot be left to chance. He further argues that corporate management must implement effective planning and control processes. Goodman and Dingli (2013) claim that innovation management facilitates creativity through successful activation of processes, which should assist an organization to acquire competitive advantage. The implementation of a process requires a serious consideration of strategy, decision making and problem solving. By managing the innovation process, an organization can create a climate and culture that encourage communication, generation and evaluation of new ideas. Moreover, innovation involves action and strategy and includes taking decisions about future goals of an organization. Therefore, it is important that companies take innovation seriously (Goodman and Dingli, 2013).

However, Haour (2004) does not share the above views on innovation management, instead he claims that through forcing a bureaucratic method on an innovation process it kills the employee's innovative energy since there are too many different paths to success. Furthermore, Preez and Louw (2008) have a more mixed opinion: the innovation process requires good and efficient innovation management, and it is important that an innovation management framework includes a combination of flexibility and structure.

Moreover, Dereli (2015) explains that competition and innovation influence each other. Competition drives innovation initiatives, while at the same time, innovation supports competition as it makes competition more intense. Björk and Magnusson (2009) highlight the

relationship between innovation and competition as well. Due to the fast speed among business competitors and the globalization, companies need to innovate on a daily basis. Therefore, there is a need to have a continuous flow of ideas. In a later stage it becomes important to recognize which ideas that have the potential of becoming good projects (ibid). Furthermore, Dereli (2015), explains that technology is the primary drive for change and innovation. It plays an essential role in the production of new products and processes, and by changing foundations of industrial structure technology redefines the rules of competition. Firms have been forced to look beyond their own borders when pursuing new technology and when sharing knowledge and ideas (Grant, 2010), which brings us into the next topic of the theory chapter; open innovation.

2.1.2. Open innovation

Open innovation (OI) is the use of meaningful outflows and inflows of knowledge to accelerate the process of innovation. A firm can and should use internal or external ideas to reach a chosen market (Chesbrough, 2006). As an example, ideas can originate outside a firm's internal lab and be brought in for commercialization (Chesbrough, 2003). Björk and Magnusson (2009) argue that, today potential sources of ideas are employees, customers, partners, collaborators and private inventors. Innovation ideas develop and evolve over time and in order for firms to be innovative they need a sustainable flow of ideas. With OI the boundary between the firm and its outer environment becomes porous, creating an easier way for the innovation to move among them (see fig. 3). If a company is too internally focused there is a risk that it will miss opportunities which may fall outside the current structure (Chesbrough, 2003). By opening up the boundaries of the firm companies are enabled to realize radically new product innovation. Furthermore, information and communication technologies have lowered the barriers and the distance between different actors in the innovation process, allowing them to integrate more with each other (Gassmann, 2006).
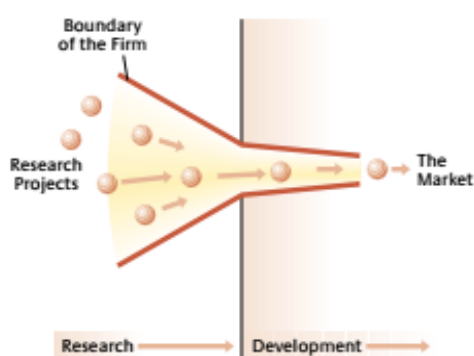
Figure 2. Closed innovation   *Figure 3. Open innovation (Chesbrough, 2003).*
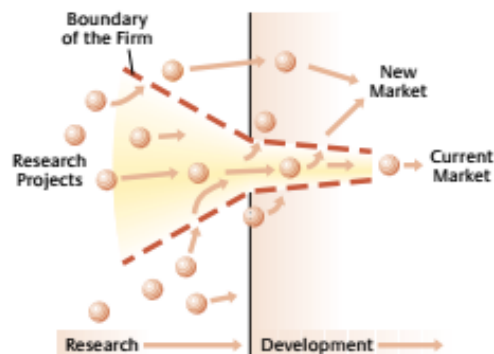
Closed innovation is the opposite of OI. In the past, companies looked upon R&D as a strategic asset when developing new ideas to bring to the market. The approach "If you want something done right, you've got to do it yourself" (Chesbrough 2003, 36) is common in situations of closed innovation. For years, closed innovation was looked upon as the "right way" for organizations to bring ideas to the market. This required heavy investments in internal R&D in order to get to the market first and enable companies to gain more market share and profits. By controlling their intellectual property (IP) firms were able to prevent competitors from taking advantage from the new product. Lastly, by reinvesting the profits from the successful innovations into more internal R&D, the company creates an internal cycle of innovation (Chesbrough, 2003).

Antikainen, Mäkipää and Ahonen (2010) support many of Chesbrough's ideas (2003). They agree that, in the past, new product development has been an activity that takes place in a highly closed process and which involves few people in an organization. However, a new level of demand for innovations has evolved lately and organizations need to gather knowledge externally. This could be done by bringing in people from industries that are related to the own organization or through collaboration with other companies. Further, they emphasize that knowledge does not diminish when shared with others. Instead most innovations take place when boundaries of knowledge constraints are crossed. In their case study on OI communities, the authors found that collective work with others was seen as fun, enriching, productive, efficient and the best way to trigger creative innovations.

One main characteristics of open innovation is that external parties are involved in the innovation process, resulting in a focus of outward looking, which might be a reason why

open innovation fits some companies better than others (Cheng and Huizingh, 2014). When firms are open, flexible and focus on core competence and co-operates, it is seen as a source of competitive advantage. To easily move ideas between two actors could be considered as an advantage when developing new products or services (Chesbrough, 2003). However, OI is associated to certain risks. It can be painful for companies to make many long-term investments in ideas that might turn out to have no commercial value. Another challenge for companies which are opening up the innovation process is that they may need to change their management styles in order to adapt to the new open structure (Grassmann, 2006). Furthermore, companies may develop technological core competencies which they want to keep inside the company, and therefore it may limit the outflow of open innovation in its technological field (Lichtenthaler, 2015).

2.2. Co-creation

Because we want to investigate how two global companies co-create innovations, the aim of the second theory section is to study the topic of co-creation. It will give an understanding of why co-creation is important to innovation, and explain how co-creation affect stakeholders.

2.2.1. Collaboration and the importance of co-creation

In the competitive landscape of today's society, companies as producers of services and goods, are not enough in order to create added value for its customers. Value has to be jointly made by both companies and consumers as co-creators (Romero and Molina, 2011). Innovation co-creation has gained an increased popularity among companies as a fundamental source of competitive advantage. A number of world leading companies, such as LEGO, Nike and Starbucks, are actively using innovation co-creation platforms to engage with consumers to create and work with new ideas. This is to be seen as a transformation of consumers from being passive observers to become active participants (Wong et al., 2016). Moreover, Kazadi, Lievens and Mahr (2016) discuss stakeholder co-creation and they define it as "collaborative activities during which multiple interdependent external stakeholders contribute to a firm's innovation process" (Kazadi, Lievens and Mahr, 2016; 525).

Users and consumers are good sources of innovation and today many organizations are co-creating together with their customers when developing new offerings (Gustafsson, Kristensson and Witell, 2012). The value created together with both consumers and

corporations are successful interactions based on the customer's specific need (Romero and Molina, 2011). Although, it could be challenging to have the capacity to assimilate customers need when developing new offerings. Companies often have more knowledge about their own solution to a specific problem than what they know about their customer's need regarding the same problem. Therefore, it is important for companies to communicate with the customers through the development process to gain a deeper understanding of how their solution can be used to satisfy the customer's need (Gustafsson, Kristensson and Witell, 2012).

According to Kazadi, Lievens and Mahr (2016), including multiple stakeholders in the innovation process is a common phenomenon. Romero and Molina (2011) explain that one of the reasons for the increase of co-creating knowledge with external stakeholders during the innovation process, is the advances in information and communication technologies (ICT), which makes it easier to communicate. Ochieng and Prince (2007) describe their view of the importance of communicating. If there is a loss in the face-to-face communication it can lead to misunderstandings and the loss of non-verbal signals (for example body language and eye contact), lead to difficulties in achieving mutual trust and confidence. This is a way of expanding the knowledge base of the firm, which in turn is essential in order to stay competitive. Another advantage with co-creation it that a company can combine the best core competences or skills and resources with one or more organizations to become more competitive (Kazadi, Lievens and Mahr, 2016).

Gassmann (2006) discusses this topic as well and explains that a single firm may benefit from collaborating with other actors in order to create knowledge during the innovation process and therefore firms involve external actors by opening up their innovation processes. But there might as well be challenges with decentralized R&D for instance, lack of reliance between the researchers could be a challenge. It is also important to understand that not all customers have the potential of being good co-creators, their role is dependent on complementary competences as expertise and knowledge. When targeting a right co-creator, it is essential to define the need of what type of partnership to establish, to make the aim, goals and requirement clear in order to work in a trustable way (Romero and Molina, 2011). Gnyawali and Park (2011) also discuss challenges that are associated with firms partnering up with a purpose to innovate. They explain that this kind of relationship may bring higher level of tensions and it may increase the risk of losing knowledge to the partner which might turn the partner into a strong competitor (ibid). Conflicts around the intended goals and regarding

execution of the co-creation process may occur when including multiple types of stakeholders in projects (Kazadi, Lievens and Mahr, 2016).

Schilling (2013) discusses risks of collaborating with a partner as well. She explains that it brings risks such as exploitation of the relationship. The partner may expropriate the company's knowledge, without giving much in return. It can be difficult to know in advance if the other partner's resources are a good match or if one part exploit more than the other one thereby giving little in return. Most firms that collaborate seek for resource fit, which is the degree to which the partner's resources complement or supplement the once of the firm. Finding companies with good resource fit is challenging as well as finding companies with good strategic fit. Strategic fit refers to the company's objectives, which do not necessarily have to be the same, as long as they do not harm the other firm (Schilling, 2013).

Collaboration demands trust, which the companies should build from the very beginning. Therefore, contracting becomes critical. The contract in itself cannot guarantee successful collaboration, however the contracting process may be used to build trust and to increase mutual understanding and learning (Blomqvist, Hurmelinna and Seppänen, 2005). Another author who emphasizes trust is Dodgson (1993). He explains that trust is important in collaboration relationships in order to facilitate communication and learning. High level of trust can enhance the internal effectiveness of an organization. Goodman and Dingli (2013) stress the importance of trust as well. They discuss the importance of having idea management systems in innovative environments. These systems include virtual or face-to-face meetings, a paper based 'suggestion-scheme' and an intranet where ideas can be uploaded and discussed. All this, they explain, require trust.

2.2.2. Innovation network

In innovation network theory it is said that firms may integrate multiple stakeholders during the innovation process. Due to the increased complexity in new products and services, innovation networks become important because they combine dispersed resources, knowledge and capabilities. Innovation networks include customers, suppliers, government, competitors, NGOs and other special interest groups (Kazadi, Lievens and Mahr, 2016). Schilling (2013) has recognized the importance of collaborative R&D networks for successful innovation. It is particularly important in high technology sectors because it is unlikely that a single individual

or organization will have access to all of the resources and capabilities needed to develop and implement a significant innovation. Even though advanced IT has made it more convenient to transmit information long distance, this is not always working. Complex or tacit knowledge transferring may require frequent and close interaction in order for companies to capture its value. Further, frequent and close interaction may also increase firm's willingness of sharing knowledge (ibid).

2.3. Managing innovation

2.3.1. Creating conditions for innovation

Aligned with many of the previous featured authors in this research, Grant (2010) claims that innovation is a source for competitive advantage and clearly innovation requires certain resources, people, facilities and time. However, there is no predetermined relationship between R&D input and innovation output. Further Grant (2010) explains that creativity, collaboration and cross functional integration are critical conditions needed to foster innovation. Creativity is not only something a firm can access by hiring creative people, it can be facilitated by the organizational environment, through human interaction, communication, playing, prototyping and experimentation. Creatively oriented people tend to desire to work in an egalitarian culture. It is important to offer enough space and resources that allow them to be spontaneous, experience freedom and flexibility and have fun. At the same time, they tend to want to work on projects that make a difference to the strategic performance of the firm (ibid). Styhre and Sundgren (2005) express a need for management and control in creative processes. They claim that creative processes are based on the interaction of tight and loose systems and are always nonlinear and disruptive. Hence, creativity is costly and resource intensive, which require management and control. However, managing creativity is paradoxical. Even though management and control is needed it cannot be tightly structured or bureaucratic. Instead, managers should encourage openness to new approaches: focusing on processes as outcomes, rewarding creativity and innovation, permitting autonomy and risk taking, providing demanding and intellectually challenging environments and building feelings of self-efficacy (ibid).

According to Hemlin, Allwood and Martin (2004), new influences tend to enhance creativity. New influences can be new personal contacts, new knowledge and ideas, or new environments. Compared to groups with members that share a more homogenous background,

groups including members from different cultural or disciplinary backgrounds tend to be more creative. Ely and Thomas (2001) explain that diversity enhances group work effectiveness. A heterogeneous group is more likely to produce a broader set of approaches to a solution or a tasks and this in turn stimulates the effective group discussion, which leads to high quality decisions. Grant (2010) confirms Ely and Thomas's (2001) statements and suggests that managers need to put together diverse work groups in order to exploit differences. Managing innovation requires a balance between creativity and technological expertise with capabilities in production, marketing, finance, distribution, and customer support. In short, to balance creative freedom with discipline and integration is what brings value to the firm. It is challenging and the key is market need, that is, focusing on solving practical problems rather than spontaneously create inventions. Problem orientation is discussed by (Burgelman, Christensen and Wheelwright, 2004) who explain that to realistically develop technological breakthroughs that satisfy market demand, it is important to understand the problem. The authors further suggest that being too committed or identified with a given solution run the risk of creating innovations that do not satisfy customer demand. As management hire it is therefore important to evaluate if individuals have the flexibility to modify or drop technical solutions if new data, constraints or problems, that affect the project, occur.

Steiber and Alänge (n.d) add to the topic of culture by giving us their view. In their book the authors have studied six companies and give us suggestions on how new dynamically capable firms are organized and managed. To begin with, the authors state that the founders and the first group of employees that they are hiring are substantially influencing company culture. The authors describe several cases where the founders of various companies recruited many new employees straight from universities, in order to avoid what they regarded to be bad habits from other companies. Furthermore, in the cases studied in their book they recognize that companies are operating in constantly changing times and markets, therefore companies need to be adaptable and adopt a proactive culture. It is suggested that companies need to focus on speed and efficiency, which requires having employees who are willing to be agile and flexible (Steiber and Alänge, n.d). Grant (2010) agrees that companies (in technology-based industries in particular) are known for their speed and unpredictability. He discusses strategy and explains that the most successful ones are those that combine clarity of vision with flexibility and responsiveness. It is important for companies to recognize the strategic characteristics of their industries and adapt to them. Steiber and Alänge (n.d) found in their

study that all case companies value minimal bureaucracy and having a flat organization, which they believe is important for companies to be competitive.

Burgelman, Christensen and Wheelwright (2004) explain that, in strategic management of technology and innovation, both strong bottom-up and top-down forces are crucial. The company needs to have a culture that balances two attributes: First, it tolerates and encourages exploration of issues and sees to what is best for the company (being aligned with the strategic intent). Second, in the culture there has to be an acceptance and capability of making decisions that are supported by the entire organization. Senior management should always look for opportunities that new inventions bring, while at the same time they have to ask themselves questions such as: "Is this invention useful to our core business? If not, where could we use it?" (Burgelman, Christensen and Wheelwright 2004, 487). Grant (2010) adds to this discussion and says that innovating organizations tend to have fuzzy organizational boundaries without hierarchical control. The project teams tend to be task-oriented and innovation processes tend to strive for enhancing variation.

Grant (2010) argues that to link invention to commercialization it is best done by designating a product champion. The product champion is preferably the person who initiated the idea, because he/she is usually committed to his/her innovation. That way companies run a larger chance to capture, direct and exploit individual's drive for achievement and success (ibid). Afuah (2003) agree that a product champion (who take an idea and do all they can to assure the success of the innovation) is important when recognizing the potential of an innovation and exploiting it. Further, Afuah (2003) mentions four additional kinds of individuals important in innovation research: idea generators (who possess deep expertise in one field combined with broad enough knowledge in another, which enable them to see linkages between the two), gate-keepers (who possess knowledge about the firm and the outside world), sponsors (a senior level manager who provides support, access to resources and political protection) and project managers (who plans and decide who should do what and when). Furthermore, Steiber and Alänge (n.d) discuss the importance of middle managers. Based on the six cases that they have studied, middle managers in entrepreneurial environments have the responsibility to make many creative individuals excel. Therefore, it becomes important for middle managers to restrain their own ideas and instead facilitate and build the opportunities for their employees to take initiatives, work, develop and test their own ideas.

2.3.2. Focus and organization size matter

In "a framework of innovation" (2007), the authors describe a survey that was brought out in order to investigate effective innovations. It revealed that most organizations focus on ideas and climate capabilities that are relatively easier to manage and control, compared to focusing on strategy and process. Ideas and climate capabilities can be run bottom-up (driven by employees, practitioners and managers), deliver immediate results and do not necessarily require much resources etc. Strategy and process, on the other hand, are more complicated and take significant time to put into place. Further, they often require significant resources, wide organizational buy-in and they need to be driven by a commitment from senior leadership.

The analysis of the survey also showed that organizations may improve their innovativeness by looking at how they are currently structured. In fact, it has been found that the largest (50 000+ employees) and the smallest (500 and less employees) are most effective in regards to innovation, while medium-sized organizations often are 'stuck in the middle'. Further these authors explain that small organizations are the most innovative because they tend to be entrepreneurial and creative, and their size necessitates innovations. On the contrary, large organizations tend to be hampered in their innovativeness because rules tend to be prioritized over risks and because bureaucracy tends to be prioritized over bravura. Yet, giants tend to be more effective in consideration of process capabilities, objective evaluation tools to kill "bad" projects, having systematic pipelines or methods to track ideas and a funnel-approach to manage their portfolio of innovation projects. Combining the entrepreneurial and creative side of the small sized organizations with the benefits of the giants is obviously the most effective way to improve overall innovation performance. However, this is not done easily (ibid).

2.3.3. Knowledge sharing

Knowledge enables firms to create, innovate and enhance efficiency, hence it is the source of competitive advantage (Lee et al. 2015). Through interacting and sharing knowledge with others, individuals increase their capacity to define a problem or situation. Therefore, knowledge sharing is essential in order to enhance the innovation capability and to produce innovations and new knowledge (Sáenz, Aramburu and Rivera, 2009).

Companies cannot create knowledge without individuals, therefore they play a critical role in the innovation processes and in knowledge-creation (Camelo-Ordaz et al., 2011). Zhang and Jiang (2015) agree with Lee et al. (2015) that there is an increasing correlation between company's competitive advantage and successful knowledge management.

In order to succeed in knowledge management, there is a need to encourage employees to share their knowledge with one another. It has been found that when individuals experience a link between knowledge sharing behavior and organizational rewards (such as promotions, career advancements or interesting assignments) they are more willing to share knowledge (Zhang and Jiang, 2015). Knowledge sharing in organizations that encourage knowledge-sharing processes are more successful in the area of innovation and when factors for motivating individuals to transfer and share knowledge are present, the innovation work improves. These arguments are evidence that knowledge sharing among groups and individuals within a company is a critical process for the creation of innovation and new knowledge (Camelo-Ordaz et al., 2011).

Individuals may be unwilling to share their knowledge in order to protect or enhance their own status. Even though organizations are investing a lot in encouraging knowledge sharing employers tend to be protective of their knowledge (Lee et al. 2015). However, Lee et al. (2015) describe that due to new trends, coworkers are interacting more than before, hence knowledge sharing has become more likely among individuals. Furthermore, Hendriks (1999) discusses whether or not knowledge workers are motivated to share their knowledge with others. He talks about Information and Communication Technology (ICT) and how these systems, though the purpose of them is to enable knowledge sharing, often fail to be used at its full potential. Hendriks (1999) again points out the role of motivation and says that if workers are not motivated to share knowledge, they probably will not be motivated to use the tools facilitating knowledge sharing either. In addition, Afuah (2003) emphasizes that the time of being a member of a team impacts team performance. At an early stage of belonging to a team, members have not developed appropriate ways of collecting and sharing information, which can hurt performance. Over time, teams overcome these barriers and team performance increases. However, teams that have worked together too long run the risk of becoming too focused on internal communications and external communication suffers. This can be critical, particularly in fast changing industries.

Furthermore, the topic of brief interactions is interesting when studying knowledge sharing. Brief interactions can be intentional and unintentional interactions, with information exchange that support and develop collaborative relationships. High level of brief, informal interaction is valuable when innovation is a high priority (Katz and Tushman, 1979). Gutwin and Greenberg (2001) state that overhearing conversations and talks in the office space enables people to start conversations and offer help.

2.3.4. Views on how to innovate

Dereli (2015) claims that because innovation activities are key to firm success, organizational processes must be restructured. In order for companies to develop and maintain innovative skills, they should develop and implement strategies. Further, it is important to have a holistic approach when addressing innovation management (ibid). With support in this and because we want to map out the innovation process of AT&T Foundry, we found it important to gather theory on innovation processes, models and disciplines. In the theory section below several views on innovation processes and how to manage innovation will be addressed.

2.3.4.1. The innovation value chain
Hansen and Birkinshaw (2007) recommend to view innovation as a value chain, which sees innovation as a sequential process. The value chain includes three phases: idea generation, conversion and diffusion. Across those phases six linking tasks are performed and these are: internal, external and cross-unit collaboration; idea selection and development; and spread of developed ideas. The capacity for companies to strengthen their innovation value chain is only as good as their weakest link. Within each of the three phases the weakest skills must therefore be identified. By identifying the weakest links, managers can be more selective about which practices to focus on when improving innovation processes. Further, by studying the innovation value chain, managers may discover that a perceived innovation strength may actually be a weakness. Typically, organizations fall into one of three "weakest link" scenarios. The first is the idea-poor company, which spends resources on developing and diffusing mediocre ideas that result in mediocre products and financial returns. The second scenario, the conversion-poor company bring forth lots of good ideas but the managers do not screen and develop them properly. This company then, needs better screening capabilities. Lastly, the diffusion-poor company face challenges in the monetizing of its good ideas. These challenges usually appear due to not invented here thinking and too much focus locally when deciding what to bring to the market (Hansen and Birkinshaw, 2007).

The Innovation Value Chain: An Integrated Flow

Viewing innovation as an end-to-end process rather than focusing on a part allows you to spot both the weakest and the strongest links.

	IDEA GENERATION			CONVERSION		DIFFUSION
	IN-HOUSE Creation within a unit	**CROSS-POLLINATION** Collaboration across units	**EXTERNAL** Collaboration with parties outside the firm	**SELECTION** Screening and initial funding	**DEVELOPMENT** Movement from idea to first result	**SPREAD** Dissemination across the organization
KEY QUESTIONS	Do people in our unit create good ideas on their own?	Do we create good ideas by working across the company?	Do we source enough good ideas from outside the firm?	Are we good at screening and funding new ideas?	Are we good at turning ideas into viable products, businesses, and best practices?	Are we good at diffusing developed ideas across the company?
KEY PERFORMANCE INDICATORS	Number of high-quality ideas generated within a unit.	Number of high-quality ideas generated across units.	Number of high-quality ideas generated from outside the firm.	Percentage of all ideas generated that end up being selected and funded.	Percentage of funded ideas that lead to revenues; number of months to first sale.	Percentage of penetration in desired markets, channels, customer groups; number of months to full diffusion.

Figure 4. The innovation value chain (Hansen and Birkinshaw, 2007).

2.3.4.2. Stage-Gate

Many companies have implemented an idea-to-launch system. One popular system for doing that is the stage-gate. It is a map that shows how to move new product projects from idea to launch and beyond. It is described as a blueprint for managing the new product development (NPD) process (Cooper, 2008). Schilling (2013) describes the stage-gate as a development model important to study in order to avoid high costs of pushing bad projects forward.

The process consists of five stages and five gates. At each stage there is a go/kill decision point. This is where a cross-functional team of people initiate parallel activities, which will diminish the risk of a development project. These activities include gathering of technical, market, and financial information needed to make the decision to move the project forward (go), abandon (kill), hold, or recycle the project. The purpose of these go/kill points is to control the project quality and to ensure effectiveness and efficiency manner of the execution of the project (Schilling, 2013). Even though the stage-gate system is very popular and commonly used in many companies, it often fails and companies face challenges in its

implementation. The translation from theory to practice seems to often be misread, misapplied or abused (Cooper, 2008).

Cooper (developer of the stage-gate) and Edgett (co-founder of the stage-gate) argue that most companies use some form of idea-to-launch process, such as the stage-gate, a game plan or a playbook. They further articulate that, compared to worse performers, best performers are two to three times more likely to have implemented a successful new-product development process. Hence they suggest that having a formal process is in itself a best practice. However, they ask themselves how well these actually work in reality. For firms to reach higher level of success some key attributes become critical. First, the processes need to be visible and documented at an operational level. Second, they need to be used and lived out. Third, project teams must have access to the resources they need (in order for the processes to lead to success it is important that the processes do not become a bureaucratic barrier). Fourth, compliance checks are required to ensure that the processes are followed (overall this is a weak area). Lastly, the processes need to be adaptable (to the needs, size and risk of the project) and scalable. Despite these key attributes, continuous improvement is important. This is because, over time, methods become outdated and bureaucratic, non-valued work and waste creep into the process (Cooper and Edgett, 2012).

According to Cooper (2008) one of the main challenges regarding the stage-gate process is making the gates work. This means that there is a risk of letting poor projects to proceed to next the stage.

2.3.4.3. Customer Development Process

The customer development process is a model which focuses on breaking down customer-related activities of an early-stage company or a startup, in order to solve problems in product development (Blank and Dorf, 2012). The two overall steps within this model include "Search" (for the business model) and "Execute" (the business model) and these are broken down into four main steps; customer discovery, customer validation, customer creation and company building, see figure 5, (Blank and Dorf, 2012).

In the *customer discovery* phase the idea generator's idea is translated into hypothesis. To be able to test the hypothesis or idea, there is a need of getting out of the building. It is important to talk to customers, test the customer reaction and gain feedback in order to develop or adjust the business idea. Usually the customers are provided with a minimum viable product

(hereafter mentioned as MVP) to be able to test a physical product. MVP is a summary of smallest possible collection of features that can work as a product and thereby demonstrating its core value. By listening to customers it is possible to get a deeper understanding of their problems and whether or not the new idea is able to solve those problems. In the customer discovery phase pivots or failure may happen (pivot is a substantial change in e.g. a product, which is driven by insights and learnings from a continuous stream of validation tests). This is a normal part of the process. To give an example; there might be a misunderstanding of who the customers are or what problems they are facing. As a response to these misunderstandings it is possible to do a pivot, which should not be seen as failure. Instead it should be looked upon as ways of improving (ibid).

The second phase, *customer validation*, proves that the tested idea has a scalable and repeatable business model that can match a certain volume based on customer needs. This is important in order to build a profitable business idea. Testing and validating the MVP, allow for a limited amount of money spent before scaling the business. Through the validation it is possible to test the ability to scale towards a big amount of customers. In the end, the customer validation process makes it possible to prove the existence of customers and confirm the acceptance of the MVP (ibid).

The third phase, *customer creation*, is based on the idea's initial sales success. In this phase, the company is increasing the money spent on creating end-user demand. Now is the time to take the knowledge from previous steps and use it in a bigger scale, for example, acquire more customers by heavy marketing (ibid).

The last phase, *company building*, is when the startup or company finds a repeatable and scalable business model. At this time, the company moves away from search-oriented activities to focus on execution and organization structure. In this phase the entrepreneur, or idea generator, might not be the right person to lead the project or startup anymore. Instead, it becomes important to bring in a leader who has more experience of scaling up the company on a more steadily basis (ibid).
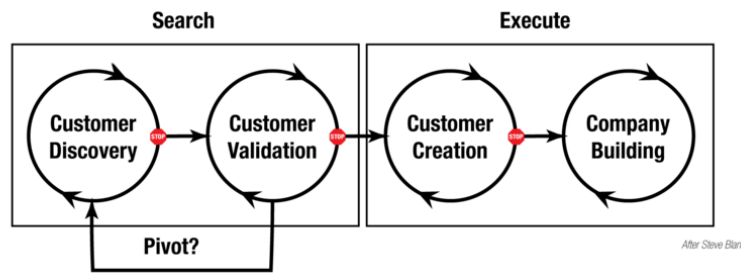
Figure 5. The customer development process (Blank and Dorf, 2012)

2.3.4.4. Lean Start-up model
The lean start-up model is a business development method and according to Blank (2013), the method has three overall key principles:

1. Entrepreneurs should focus on summarizing the hypothesis for the new venture in the framework *business model canvas* instead of writing a detailed business plan. At the end of the day, the entrepreneur only has a number of untested hypothesis.

2. The method of lean start-up has an approach of "getting out of the building", to do a so called *customer development* in order to test the hypothesis. This means that the entrepreneurs need to go out and ask potential purchasers, users and partners for feedback on the hypothesis. When getting feedback, and using the input from the different actors, they are able to revise their assumptions. After doing this, they can start the cycle again with testing the redesigned offering, in order to make more small adjustments like iterations or do a pivot if the idea is not working.

3. The third element is called *agile development*, which works side by side with customer development. This is the opposite to traditional product development with yearlong cycles and a presupposed knowledge of the problem or the need of a customer. By developing the product incrementally and iteratively agile development eliminates wasted resources and time. This third principle is where startups create a MVP, which they are testing (Blank, 2013).

By including the lean start-up model in a company, it encourages experimentation, customer feedback and iterative design, instead of planning and conducting traditional business development. Furthermore, the methodology reduces the high cost of developing a product that run the risk of failing. By being able to fail fast and to learn on a continuous basis new companies can improve their chances to succeed (ibid).

Most start-ups begin with writing a business plan and a strategy, but these plans do often not work. The reason why they do not work is because the venture is operating in an uncertain environment. It is difficult to predict the future and to know the customers and the product, therefore the Lean startup model includes validated learning. Validated learning is a process of empirically demonstrating what valuable truths a team have discovered regarding the present and future business. This type of learning is accurate, concrete and faster than classical business planning or market forecasting (Ries, 2011). Furthermore, Harms (2015) is highlighting the the importance of early customer contact. It is important to learn as much as possible early in the process, if you understand your customers, you are able to improve the products (Ries, 2011). Lastly, Fichter (2015) emphasize the ability of fast learning by testing ideas with customers, this resulting in keeping the costs at a minimum level.

2.3.4.5. Design thinking

Brown and Martin (2015, 2) define design thinking as "a discipline that uses the designer's sensibility and methods to match people's needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity". It can be seen as a lineal descendant of the traditional view of innovation that combines art, craft, business savvy, science and a deep understanding of customers and markets. In other words, design thinking is: "a hands-on approach that focuses on developing empathy for others, generating ideas quickly, and testing rough "prototypes" that, although always incomplete or often impractical, fuel rapid learning for teams and organizations" (Sutton and Hoyt, 2016).

The idea of design thinking involves a set of principles: empathy with users, a discipline of prototyping, and tolerance for failure (Kolko, 2015). Brown (2009) talks about three general phases: inspiration (where innovators experience a problem or opportunity), ideation (where they generate and test ideas) and implementation (where they move their innovation from the project room to the market. Products may go through these steps more than once.

Cohen (2014) describes design thinking as a process of five stages: Empathize, Define, Ideate, Prototype and Test (see fig. 6). The first part involves empathy for the customers that you are designing for. This is often manifested through a series of activities, which tries to create an experience of what or how the idea will ultimately be consumed. These stages are not linear but can occur simultaneously and repeatedly.
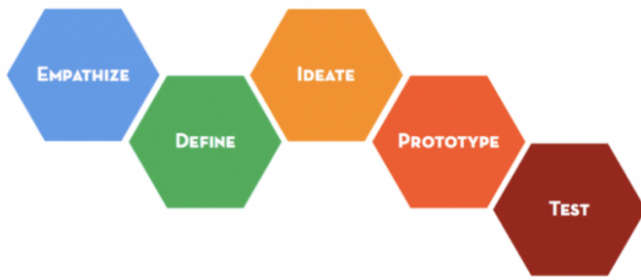
Figure 6. Design thinking stages (Cohen, 2014).

Understanding user need is widely discussed in the design thinking discipline. Kolko (2010), explains that user research gives the designer a vast amount of data, which helps her/him to better understand the problem he/she is trying to solve. Kolko (2010) further stresses the importance of allocating time for designers to work on design synthesis work (organize, manipulate, prune and filter gathered data into structured and comprehensible information and knowledge). Design synthesis work is intangible and often seen as abstract, therefore its value is complicated to measure and it is challenging to justify the time and resources spent.

Prototyping is an important part of design thinking and Kolko (2015) explains that prototyping is the only act that can transform an idea into something truly valuable. The case of the consulting firm IDEO can be used as an example here. IDEO designers were engaging with the users at an early stage in the innovation process. To get early feedback the designers went to the users with a very low-resolution prototype. They kept repeating this process in short cycles, steadily improving the product until the user was satisfied with it. As IDEO eventually launched the product, it was almost guaranteed success. Another benefit of this iterative rapid-cycle of prototyping was that it proved to be a highly effective way to obtain the funding and organizational commitment to bring the new product to the market. Brown and Martin (2015) claim that fear of the unknown often kills an idea. However, with rapid prototyping, a team can be more confident of market success. The authors conclude by saying that design thinking principles not only is a way to improve the process of designing tangible products, but also to be even more powerful when applied to manage the intangible challenges (such as people engagement).

Kolko (2015) agrees that design thinking is the best tool for creating interactions and developing a responsive, flexible organizational culture. He says that the complexity of

modern technology and modern business is increasing and common to these kind of challenges is that people need help making sense of them. This is where design thinking becomes important.

Indra Nooyi the CEO of Pepsico explains the relationship between innovation and design: "There's a fine line between innovation and design. Ideally, design leads to innovation and innovation demands design" (Ignatius 2015, 82). Historically designers played no early role in the work of innovation. Instead, designers were asked to make an already developed idea more attractive to consumers. Now, however, designers are being asked to create ideas that better meet consumers' needs and desires. This is a strategic approach that leads to new forms of value while the historical approach is tactical and results in limited value creation (Brown and Martin, 2015).

Brown and Martin (2015) explain that, as it has become clear that the success of many commercial goods come from smart and effective design, companies have started to employ it in more and more contexts. Designers are being hired in high-tech firms not only to work on hardware but also on software. Even corporate strategy making has become an exercise in design. Kolko (2015) emphasizes this as well by explaining that design is getting much closer to the core of the enterprise.

2.4. Literature summary
Based on the research question and purpose of this study, combined with the research design, the topics of this theoretical framework were chosen (see fig. 1). This research revolves around innovation. Hence, studying the importance of innovation was a natural first step to take and we found that theory displays three views on innovation management. Limberg (2008) and Goodman and Dingli (2013) are advocating innovation management and explain that it facilitates creativity and fosters a climate and culture that encourage communication, generation and evaluation of new ideas. Haour (2004) has a different view on innovation management and claims that trough forcing a bureaucratic method on an innovation process it kills the employee's innovative energy. Lastly, Preez and Louw (2008) have a more mixed opinion and claim that the innovation process requires an innovation management framework that includes a combination of flexibility and structure.

Because we are investigating how two companies co-create innovations in an innovation center, open innovation, co-creation and collaboration were natural matters to be raised, and which further led us into studying innovation networks. These fields gave us an insight in how co-creation and companies' ecosystems affect innovations.

Later in this literature review we aimed to cover the topic on how to manage innovation. There are many different views on how to do this and based on the above described theories there is no "one way fits all solution" to innovation management. It is rather a matter of setting a culture of being flexible, non-hierarchical and risk averse. In the field of innovation management studies there is a great interest in creativity and fostering a creative culture. Because creativity is needed to foster innovation we dug deeper into that topic. Furthermore, in order to manage creative environments, it is important to learn more about leaders' roles, diverse work groups, knowledge sharing and problem oriented approach, hence we addressed those topics. Having reviewed some characteristics of innovation management, we proceeded by studying different innovation processes, models and disciplines.

By leveraging wisdom from these already established bodies of work our hope is to create a better understanding of the investigating topics and deliver an analysis relating theory to empirical findings. Together we hope that all this will eventually lead to a worthwhile answer to our research question.

3. Company description

3.3. Ericsson

Ericsson is a communication company founded in 1876 and world leading within the communication technology industry. Ericsson is ranked as the number one in mobile infrastructure, Operation Support Systems (OSS), Business support systems (BSS), TV platforms and telecom services. The company is operating in more than 180 countries and employs around 118 000 people. By providing communication networks, telecom services and support solutions Ericsson makes it easier for people all over the world to communicate. Furthermore, the networks supported by Ericsson serve more than 2.5 billion subscribers through different operators (Ericsson, 2015b).

Ericsson has about 39,000 granted patents, which counts for one of the industry's strongest IP rights portfolios. A driving force behind the improvement of connectivity and expansion worldwide comes from a strong leadership in services and technology. By offering a diverse portfolio Ericsson is realizing its vision: A Networked Society, where every person and every industry is empowered to reach their full potential (Ericsson, 2015a).

3.1. AT&T Foundry - Palo Alto

AT&T Foundry (in this thesis also called "the Foundry") in Palo Alto is an innovation center founded and owned by AT&T. AT&T is a communication company and one of the world's largest in its field. It offers powerful and advanced global backbone networks. Its business idea is to help people connect through advanced mobile services, high-speed Internet, next-generation TV and smart solutions for people and businesses (AT&T, 2015). AT&T owns four innovation centers called AT&T Foundry and these are located in Palo Alto, Plano and Atlanta in the US, and in Ra´anana, Israel. At the moment a fifth Foundry is being set up in Houston. The following companies are sponsoring the different Foundries: Ericsson, Amdocs, Intel, Cisco, Microsoft and Alcatel-Lucent (AT&T Foundry, 2015). The overall goal of all AT&T Foundry innovation centers is to make AT&T grow. In exchange of the sponsorships, the sponsors have representatives working at the innovation centers in order to collaborate on new innovations that will deliver valuable services and products to their customers. At AT&T Foundry in Palo Alto, Ericsson is the only sponsor, hence staff from AT&T and Ericsson work and co-create there (Josefsson, 2016).

The Foundry is a collaborative and open environment and its mission is to accelerate launch of new services and products to market three times faster than traditionally within AT&T. This is done by driving projects that combine external perspectives and technology, prototyping, the voice of employees, and focus on engineering led by user-centric design (Internal document). The projects typically involve innovators, startups, academics, entrepreneurs and investors (AT&T Foundry, 2015).

There are three core ideas which guide the work at AT&T Foundry; innovation, collaboration and speed (AT&T Foundry, 2012). The first core idea that is guiding the work at the innovation center is about innovation. Ideas are poured into the Foundry through AT&T employees and suppliers, new companies (start-ups) and innovation workshops organized with customers and developers. After being reviewed and prioritized by the relevant AT&T business unit, ideas are proposed to AT&T Foundry. The second idea is to closely collaborate with application developers, customers and suppliers in order to find new interesting ideas. When a promising idea has been identified there is a need of creating innovations that make the ideas pay off to the application or service users and the network. When it comes to the third core value, speed, AT&T Foundry has a time frame of 12 weeks to deliver prototype solutions. Because speed is important at the Foundry, it does not engage in basic research or network infrastructure projects, and processes that could slow things down are taken out (ibid).

4. Methodology

This section provides reasoning about the selection of the methods and approaches used in this research. We also provide a discussion about the chosen research design, research method, primary and secondary data collection. In the analysis section we describe the process of our analysis and how treat the collected data in a proper way in order to gain a high research quality. Lastly there is a discussion of reliability and validity of our work.

4.1. Research strategy

To answer our research question a qualitative research strategy was chosen. Because we wanted to describe how Ericsson and AT&T are co-creating innovations at AT&T Foundry, and to present the innovation process from the view provided by the staff at AT&T Foundry, a qualitative approach was suitable rather than a quantitative approach. Further, a qualitative approach seemed appropriate when conducting a single case study (more about this in 4.2). The most striking characteristics of qualitative research is that it tends to be concerned with words rather than numbers and it tends to describe details and be explanatory (Bryman and Bell, 2011), which we found suitable to this research.

This research started with a certain research question in mind (see fig. 1), given to us by the company Ericsson. Through Ericsson we got the opportunity to work on site at AT&T Foundry. This gave us first-hand experience and a great insight at the innovation center, which enhanced our knowledge and the quality of this report. With the research question and site selection in mind we started to build a theoretical framework based on secondary data collection through a literature study. Through the theoretical framework we gained a base of knowledge which we used while creating the interview guide. The interview guide is based on our research question and on our theoretical background. The formulation of the interview guide was an iterative process that included reformulation of questions based on input from supervisors and additional theory that was found along the way.

When the interview guide was set we were able to conduct the interviews by interviewing staff working at Ericsson and at AT&T Foundry (further described in 4.3.1 and 4.3.2). As interpreting the data, it was realized that additional theory and models needed to be added to the empirical material which made the process both iterative and abductive. It was also discovered that we would make use of follow-up questions to the interviews already held.

Therefore, a second round of interviews were held with some of the senior people at the Foundry. This gave us deeper understanding of the innovation process and co-creation activities at the Foundry, which made our analysis easier in order to come up with conclusion on how Ericsson and AT&T are co-creating on innovations at AT&T Foundry. After gathering all the data, it was prepared and systemized and led into our empirical findings, which we related to theory and analyzed. Eventually, conclusions were drawn.
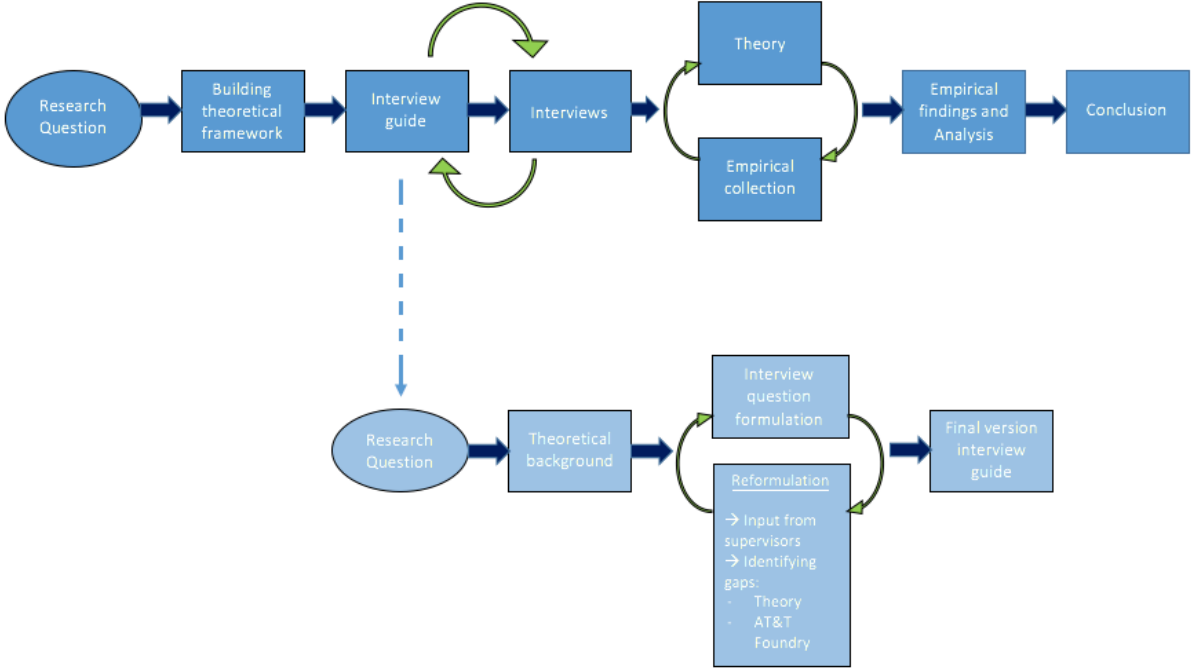
Figure 7. Research approach.

4.1.1. Scientific approach

When conducting a study within science there are two fundamental approaches: hermeneutics and positivism. Hermeneutics roughly means that the researcher interpret, study and pursue to understand the surrounding environment such as human actions and how people live. It is considered to be reflected in the interpretation of the written and spoken language as well as how a person acts. Hermeneutics is about understanding the research problem as a whole. Positivism is the opposite to hermeneutics and has its base in natural science which implies that through observations and measurements the researcher can confirm observations (Patel and Davidsson 2003). Because we wanted to obtain deep knowledge about a specific phenomenon, primarily through interviews, this thesis has a hermeneutic approach.

Furthermore, within the scientific approach, there are three main approaches of the relation between theory and empiricism: deductive, inductive or abductive (Patel & Davidsson 2003).

The deductive theory is the most commonly used approach in the nature of the relationship between research and theory. Based on what is already known about a specific topic, the researcher deduces one or a number of hypotheses, which must later on go through empirical scrutiny (Bryman and Bell 2011). The inductive approach is the opposite of deductive theory, and here the theory is an outcome of research. This means that the process involves the creation of generalizable inference of observation. An abductive approach is a mix between the deductive approach and inductive approach (ibid). The present study involves an abductive way of doing research since we test our empirical foundation, primarily from interviews, towards existing theories and research, like Patel and Davidsson (2003) suggest. Thereby we deepened our knowledge about our research problem and attained new insights. It has allowed us to identify relationships between empirical findings and theory.

4.2. Research design

Because we wanted to study data from one instance only (the innovation center 'AT&T Foundry'), a single case study was considered suitable for this research (Dul and Hak, 2008). The design provided a possibility to go in depth with, and analyze the specific situation and innovation process of AT&T Foundry. Although a single case study can act as a good example and could be enough to falsify theories, it is important to bear in mind that a single case study does not prove a theory (Siggelkow, 2007). The chosen research design can provide an understanding which includes inside information, e.g. the way the innovation process is perceived by the people who are employed by AT&T Foundry. By having access to various perspectives of the employees, a versatile view can be obtained, which was the ambition of the thesis in order to study the co-creation and map out the innovation process that is used at AT&T Foundry today. Finally, because the aim of this study is to use theories in practice and contribute to knowledge of practitioners and not to contribute to the development of a theory, this study is practice oriented (Dul and Hak, 2008).

4.3. Research method

In order to give answer to our research question we used both primary- and secondary data. Primary data is our main focus in this study and it was collected through semi-structured interviews. Secondary data was based on scientific articles, books, course literature and company information. This data collection was important to understand the research topic, ask relevant questions in the interviews, and to give the reader an understanding of some of the topics that are highlighted in the empirical findings- section. Furthermore, company

information was studied through websites and internal company documents from Ericsson and AT&T Foundry. These sources gave us insights and a base of knowledge, that were useful during the research process.

4.3.1. Primary data collection

Bearing in mind that the goal is to have an unbiased view and not to impact the interviewees we conducted the interviews with the employees at AT&T Foundry. In order to obtain an unbiased impact and to create a relaxed yet professional interplay between us and the interviewees, the interview questions and the environment in which the interviews were held were carefully selected and structured. The questions were phrased in a general way rather than allowing personal opinions and knowledge influence them. The environment chosen for the interviews was closed meeting rooms at the Foundry. We spent one month at the AT&T Foundry facilities, where we had our own work-space and got to know most of the staff before carrying out the interviews.

4.3.1.1. Interviews
Before going to Palo Alto we had an informal interview in Sweden at Ericsson's' head office in Kista with our external supervisor from Ericsson. The purpose of the interview was to create an overall understanding of Ericsson as an organization.

When in Palo Alto we interviewed managers and staff at AT&T Foundry in order to gather background information about the Foundry and to create an understanding of how the co-creation and innovation process work there. These interviews took place in the facilities of the foundry in Palo Alto. The interviews were held after a couple days of working at the Foundry. Therefore, they were perceived as relaxed and there was a feeling of trust and honesty in the interviews. At each of these face-to-face interviews, both of us researchers and one of the interviewees were present. Each interview was approximately 45 minutes to an hour long.

Something we have benefited from by having interviews with English speaking people, is that potential language and translation problems have been avoided. Bryman and Bell (2011) explain that such problems might have occurred if the interviewed people did not speak English, which would have required translation. Since the two of us were present at each interview one of us was leading the interview while the other took notes. It was important that

one of us was always focused on asking questions and listening in order to be responsive to the interviewees' answers and to be able ask follow up questions. Furthermore, all the interviews were being recorded, which enabled us to transcribe the interviews correctly. The notes and recorded interviews made the analysis and interpretation of the results easier. After a first round of interviews (19 interviews), we performed follow up interviews with five people. We did this for two reasons and the first reason was to get a better understanding of the Foundry. Its set -up is complex and the purpose, goals, vision and mission were still unclear to us. The second reason for the follow-up interviews was to get feedback from these five people (who are more senior), on the interviewees' answers regarding the innovation process. After conducting these 24 interviews there were only a few more people at AT&T Foundry left interviewing, however we believed that we had reached a saturation level of the selected data. After these 24 interviews we perceived that the interviewees brought up the same information again, hence we ended the data collection.

4.3.1.2. Interview structure

For this study a semi-structured interview approach has been applied since the interviewees have all been asked the same questions in a standardized way, while at the same time they have been offered the opportunity of speaking more freely to give more extensive answers. Most questions were prepared before the interviews, but there was room for unplanned questions in order to gain deeper and richer information. Furthermore, our data varies from interviewee to interviewee, some of the interviewees gave short answers, replying to the questions only, while others laid out extensive explanations and described their answers in detail. In qualitative research, "Why?" questions are frequently used to be able to explain and create and deeper understanding (Bryman and Bell, 2011). Therefore, such questions were added. After seven interviews we realized that by asking the interviewees to grab a pen and draw the innovation process on a white-board we got more detailed answers. Therefore, we added this step to the remaining interviews. The interviewees at AT&T Foundry had a diverse level of knowledge and information about the innovation process and the co-creation at AT&T Foundry. Hence more complementary questions were asked to the interviewees who we understood could provide more information. By doing so, we benefited from the flexibility of the semi-structured method.

In an interview it is crucial to ask the right questions in the right way. Thus, preparations were important. Before the interviews the questions were chosen carefully based on our knowledge

about Ericsson, AT&T and AT&T Foundry and on innovation in general. This generated information that was comparable and easy to analyze (Larsen, 2009). In order to avoid yes or no answers, open questions were used. This forced the interviewees to provide more comprehensive answers. Before the actual interviews, an interview guide was created. The questions chosen for the interview guide were based on the research question, our knowledge about the innovation center and on the theoretical framework.

4.3.1.3. Interviewee selection
When identifying relevant representatives for the interviews, following criteria were used: a) the interviewee has to work at AT&T Foundry, or b) the interviewee has worked at AT&T Foundry previously. This selection was made based on our own judgment of what would be relevant to answer the research question. These profiles gave us information, perceptions and perspectives on the innovation process. To gather the sample, we took help from our external supervisor who offered us the opportunity to visit AT&T Foundry, Palo Alto for four weeks. The total number of interviews turned out to be 24 (five of the interviewees were interviewed twice).

4.3.2. Secondary data collection

The literature study was conducted in order to create knowledge about what has been done earlier in the field and to better understand the topics. The literature study provided us with knowledge essential to perform a relevant study, to better understand the results, make an analysis and make as fair conclusions as possible.

A narrative review is useful when explaining a broad perspective of a certain topic. It puts together many pieces of information into a more readable format (Green, Johnson & Adams, 2001). Therefore, a narrative literature review was found suitable to this case. We were able to gain basic knowledge within the topic of innovation by reading literature on innovation in general, before digging deeper into the subject. This narrative review led to a formulation of the theoretical framework with a starting point in the innovation literature. Later on, literature on managing innovation, co-creation, open innovation and different innovation processes were considered. In order to gain a deeper understanding of this literature, we conducted an in-depth narrative literature review. According to Patel & Davidsson (2013) a good understanding of the topic is essential in order to succeed in interview processes. Therefore, a

great deal of time was spent on collecting theory before executing the interviews. To extend our understanding of the topic further we visited other innovation centers in Silicon Valley and attended innovation-seminars and workshops for companies and entrepreneurs.

During the literature study, the book *Strategic management of technological innovation* by Melissa Schilling (2007) was found. It was used as a theoretical base while investigating innovation processes, open innovations and innovation models etc. This book is considered an acknowledged framework since many other studies and articles have referred to it.

To gather relevant articles, databases such as Business source premier, Emerald, ScienceDirect and Google Scholar were used. Articles were chosen based on their eigenfactor in order to confirm their reliability, and based on the journals in which they have been published. Relevant journals to this topic are: Research Policy, International journal of project management, Journal of Product Innovation Management, and Journal of Business Research. By studying the references of the articles already chosen, new interesting articles were found. When searching for relevant articles keywords such as innovation, innovation management, innovation process, technology, co-creation, globalization, and business development were used. Websites of Ericsson, AT&T and AT&T Foundry, together with internal documents were used in order to gain background information of the introduction and problematization of this study. To choose as updated information as possible has been a priority of ours in the selection of data.

The literature review enabled us to analyze the collected data (from the interviews) in an informed way, aligned with the suggestions of Bryman and Bell (2011). A process of reviewing the literature was made during and after the data collection and decisions about what to include and exclude in the theory part were taken

4.4. Analysis

An important and time-consuming step in the process of analysis is to treat the data in a good way by processing it so that it becomes analyzable and easy to interpret (Larsen, 2009). To analyze the collected data, a matching process of the responses was made. In this case the data collected through the interviews were prepared and systematized in three matrixes, dealing with one main topic each (Appendix 1,2 and 3). The matrixes were made simple and contain short sentences and keywords. They enabled us identifying patterns and discrepancies in the

responses and gave us an overview of how many interviewees agreed or disagreed on any given topic. Central key messages and quotes were found in the fully transcribed interview answers. By going back to these we were able to add more details to the result.

Interviews can be difficult to analyze. It is easy to misinterpret the material, for example by adding own values in the interpretation. A significant danger may be that the own analysis lapses and that it is being assumed that the interviewees are bearing the sole and the most accurate depiction of reality. It is important to be aware of the risk that the material may be distorted and fed back to the theory in the wrong way (Robbins, 2003). Therefore, it is important to question the collected information when doing the analysis. As an example, we realized that the majority of the people we interviewed were technology focused, which may affect their answers since they had a technology point of view on the business and the work at the Foundry. Further, we have carefully subscribed all interviews in order to include as much information as possible. We think this was important in order to give a fair view on how the two companies co-create innovations.

4.5. Research quality

Qualitative research has been criticized for being too impressionistic and subjective, relying too much on the researchers' views of what is significant and important as well as on the personal relationships that the researchers create with the people studied (Bryman and Bell, 2011). Therefore, we already now want to inform the reader that the empirical findings of this study are subjective. In order to establish high quality of this research, literature on research methodology was studied, a course in research method was taken and we attended research seminars at Stanford University, California.

4.5.1. Reliability

In qualitative research there are two ways of confirming reliability: internal- and external reliability. *Internal reliability* focuses on the degree of agreement among the researchers (Bryman and Bell, 2011). Both authors have been active and involved during the whole research process, including taking decisions and necessary actions in order to make sure that the thesis and research has a high quality. *External reliability* refers to the degree to which the study can be replicable (Bryman and Bell, 2011). Throughout the research, a lot of effort has therefore been spent on explaining the work process in order to make replicability possible.

We have prioritized to do continuous and detailed documentation to manage to secure the reliability. For instance, we have made interview guides, interview matrixes and figures describing the research approach and choice of theoretical framework to increase feasibility of replicating the study and to minimize errors and biases. Choices, actions and decisions made throughout the study have been explained in a careful way in order to improve replicability.

However, we know that case studies are not the easiest research strategy to secure the reliability of. Observations can be wrong even if the studies are replicated several times (Merriam, 1994).

4.5.2. Validity

As with reliability, validity can be divided into external- and internal validity. *External validity* indicates whether the results of the study can be generalized outside of the specific research context. A single case study has a focus on uniqueness of a specific case (Bryman and Bell, 2011) and in our case we have studied and produced an overall innovation process and description of co-creation at AT&T Foundry in Palo Alto. Whether the findings can be useful for other companies and their innovation centers or co-creation set-ups, depend on elements such as how those are structured, managed and where they are located.

Internal validity is argued to be crucial for qualitative research. It refers to the matching of reality and empirical findings. This is important in qualitative studies since data collection is conducted by the researchers, which means that the researchers have a direct impact of the findings, interpretation and conclusion of the study (Bryman and Bell, 2011). The findings of this thesis are mainly based on the interviews in our data collection. They aim to explain the reality of the case studied. In our analysis we therefore matched patterns in the empirical findings. Making interview matrixes facilitated that process. Further, we tried to explain the empirical findings by supporting them with the theoretical framework.

Through the study, we were mapping out the innovation process in order to gain an overall understanding of how people at AT&T Foundry are co-creating innovations. It was done through a matching process of the responses from the first 19 interviews. To assure that this process is a fair understanding of the innovation process of AT&T Foundry, we asked the last five interviewees to give feedback on the figure and we had a discussion around it. This way we strived for securing validity.

5. Empirical findings and analysis

The findings presented in this chapter are based on the interviews with the employees of AT&T Foundry and on internal documents provided by staff at AT&T Foundry. Furthermore, this is a subjective presentation of the results. An objective interview matrix can be found in Appendix 1, 2 and 3.

5.1. AT&T Foundry overview
This chapter starts with an overview of AT&T Foundry in pursuance of creating a better understanding of the innovation center, it's set-up, focus areas and goals.

In 2010 AT&T decided to open an innovation center in Silicon Valley. The reasons the innovation center was founded was for AT&T to disrupt from the inside out and to have a space to take risks with new innovations and ideas. Good leadership, investment in dynamic people, and the location in Silicon Valley were important building blocks for the innovation center, Interviewee 21 explains. Further, Interviewee 18 describes that Ericsson became a partner and sponsor of AT&T Foundry in Palo Alto as an outcome of a larger contractual agreement. If we are to believe Hyll and Pippel (2015), partner selection is crucial to the success of innovation with regards to unwanted knowledge spillovers, varying incentives between cooperation partners and transaction costs. Therefore, it can be assumed that the choice of partnership had more elements to it than the contract only. For instance, through AT&T Foundry Ericsson gets the opportunity to co-create with one of its largest customers (as described in the background), exchange knowledge and build a closer relationship (which we will go into later in this chapter). The success of this set up is confirmed in theory. Romero and Molina (2011) describe that value created together with consumers and corporations are successful interactions based on the customer's specific need. Hence, it implies that Ericsson can succeed in delivering products that satisfy the needs of AT&T, if creating them together with the customers.

Interviewee 2 claims that innovation centers are by definition cost centers, which cause many of them to fail. The uniqueness of AT&T Foundry in Palo Alto is the sponsorship by Ericsson, which accounts for construction- and operational costs. Hence the Foundry is a safe environment where people afford to take risks and fail in their projects, without being

concerned about running out of finance. To work in a safe environment is something highlighted by several interviewees, for instance by Interviewee 10 who explains: "*At a startup you have to build the market and the technology and the whole company. At the Foundry you only have to build the product and you don't have to worry about funding*". From our understanding it was something that allowed the employees to focus all their attention on the projects rather than on the circumstances around it. This implies that they can improve their efficiency in bringing new products to the market, in accordance to the idea of having a 12-week time frame (which is mentioned in the company description).

Ever since its start, the Foundry has been iterative in order to be reactive to the needs of the business. The focus within the Foundry has therefore evolved in three phases. In the Foundry's first phase the focus was directed towards engagement in the ecosystem, which turned into phase two of focusing on evolving the company culture. The Foundry is now in its third phase, which focuses on impacting the business for both sponsors and AT&T.

> *"If you are an innovation center: tell a good innovation story or go home."*
> - Interviewee 12

According to Interviewee 20, this year there is a goal for Ericsson and AT&T to do one project together at AT&T Foundry. Furthermore, according to Interviewee 5 and 12, there are three primary goals that the employees' time revolve around at the Foundry. The first goal is to focus on creating a good innovation story, Interviewee 21 explains this goal: *"The reason every big company has innovation centers is because they have to, for survival. Because they have to tell the story to their shareholders and to their board that they are trying to change and adapt. We are that story for AT&T"*. The second goal is to be externally focused, and to reach this goal the Foundry meets and engages with startups and venture capitalists (VCs) in order to get an insight into the ecosystem. The last and third goal is to be internally focused, which involves engagement between Foundry people and internal Vice Presidents (VPs) at AT&T. Grant (2010) argues that the most successful companies are those that combine clarity of vision with flexibility and responsiveness. Therefore, we believe that because AT&T Foundry is both externally and internally focused it has good prerequisites to be responsive to the dynamic market, while at the same time stay aligned with the business of AT&T.

Most employees at the Foundry are hired under the generic title "innovation coach". Innovation coaches at AT&T Foundry are collaborating and innovating with the purpose to deliver services and applications to customers in a fast pace. Moreover, one of the directors at the Foundry is hired to meet with startups (around 500/year) and VCs in order to get an insight in emerging companies and the industry, and hence, how they affect the ecosystem. Another director is working on establishing the Foundry brand through different outreaches and PR strategies. This employee is also making sure that the Foundry projects are aligned with AT&T's business units (BU). By letting these two employees focus on the ecosystem and brand recognition, it can be assumed that this is a way for the Foundry to meet the first and second goals, discussed in the paragraph above.

Finally, in order to stay productive and to avoid waiting time, employees at the Foundry are encouraged to work on two or more projects at the time to avoid getting stuck when waiting for someone or something out of their own control. Interviewee 20 explains that about 80% of each employee's time is spent on their current project(s) and 20% are spent on figuring out their next project.

5.1.1. Summary of 5.1. AT&T Foundry overview

The reasons AT&T Foundry was founded was for AT&T to disrupt from the inside out and to have a space to take risks with new innovations and ideas. The uniqueness of AT&T Foundry in Palo Alto is the sponsorship by Ericsson. Hence the Foundry is a safe environment where people afford to take risks and fail in their projects, without being concerned about running out of money. Furthermore, the Foundry has three primary goals: the first is to focus on creating a good innovation story, the second is to be externally focused and the third goal is to be internally focused. By being both externally and internally focused we believe that AT&T Foundry has good prerequisites to be responsive to the dynamic market, while at the same time stay aligned with the business of AT&T. Lastly, we want to highlight that this year there is a goal for Ericsson and AT&T to do <u>one</u> project together.

5.2 The innovation process of AT&T Foundry
In this section the innovation process at AT&T Foundry is presented from two different viewpoints. The first innovation process is based on internal documents and it represents the

'official innovation process' that the Foundry displays (fig. 8). The second innovation process is a combination of the views from the 23 interviewees (fig. 10).

5.2.1. AT&T Foundry's sample project progression

At AT&T Foundry there is a sample project progression (fig. 8) that shows an example flow of multiple project phases, from project start to market launch. When studying and working in accordance to this figure, it is important to bear in mind that each project is unique and that the 'innovation process' should only be seen as a guideline. The flexibility of the process allows some projects to start and complete in one phase only, while some projects mature through several phases. Furthermore, the idea is to govern each project by a 12-week process and therefore, the projects have to be small enough in scope to be completed within that timeframe. Teams within AT&T's business units work together with Foundry teams in the projects. In the early phases the Foundry teams are more central in the innovation work, and as trials and business modelling begin, the BU will play a bigger role and the Foundry members' involvement declines (Internal documents).

Figure 8. Project progression at AT&T Foundry (Internal document).

Figure 8 is visualizing the *'official innovation process'* of AT&T Foundry. We have identified similarities in this process to the innovation value chain presented by Hansen and Birkinshaw (2007). The authors explain that innovation can be seen as a value chain with three phases:

idea generation, conversion and diffusion. However, the theory differs from reality because Hansen and Birkinshaw (2007) suggest that the process is sequential, while at AT&T Foundry it is iterative and flexible and should be seen as a guideline.

5.2.2. The overall view on the innovation process

The interviewees have a somewhat different picture of the innovation process compared to the internal documents. At the Foundry there is no universal way of working. Each individual works in ways that suit themselves and the uniqueness of each project. All interviewees agree that imposing a strict structure to the Foundry will not be successful because there are too many types of projects. When they describe their ways of working they all agree that their work is flexible and that there are no rigid frameworks at the Foundry. Interviewee 5 explains that the process is different in each project and if people do not recognize that they will fail.

Interviewees 1, 2, 7, 11, 14, and 22 mention design thinking as a discipline that they are using throughout their projects. Interviewees 5, 6, 9 and 10 do not use the term 'design thinking', however, they describe their work process in ways that imply that they use design thinking. This is something we were able to recognize and call out from the interviews because we have studied literature on design thinking and by attending a design workshop at Stanford University. For example, the interviewees use words such as empathizing, understanding customer need, prototyping, iterating and accepting failure. In the theory, Kolko (2015) and Cohen (2014) discuss this as well. Hence, there is reason to believe that design thinking is important for innovation. Further, Interviewee 1 mentions that the lean startup method is being used at the Foundry and the majority of interviewees describe that they have an iterative approach to their work, where learning from their mistakes is important and realizing failure quickly is critical.

Through our company description we knew that the mission of AT&T Foundry is to accelerate launch of new services and products to market three times faster than traditionally within AT&T, and that there is a total time frame of 12 weeks to deliver prototype solutions. We found this interesting and wanted to find out more about how this works in reality. Therefore, we asked the interviewees about the 12 weeks process. Most interviewees (everyone except Interviewee 16 and 19) agree that the innovation process takes 12 weeks. Even though they agree that the innovation process is 12 weeks, they define the 12-weeks process differently (see fig. 9). The figure shows that people have different interpretations of

what the 12-weeks innovation process includes. The definition most people agree upon is that phase zero, one and two take 12 weeks each (see fig. 9). Based on the results presented in this figure there is reason to believe that the Foundry's core value 'speed' is well communicated among the employees. However, the definition of the 12 weeks is not consistently communicated within the Foundry. It can therefore be argued that improvements in the communication is necessary in order for the employees to have the same time constraints in their projects, and to not spend too much time on each project.
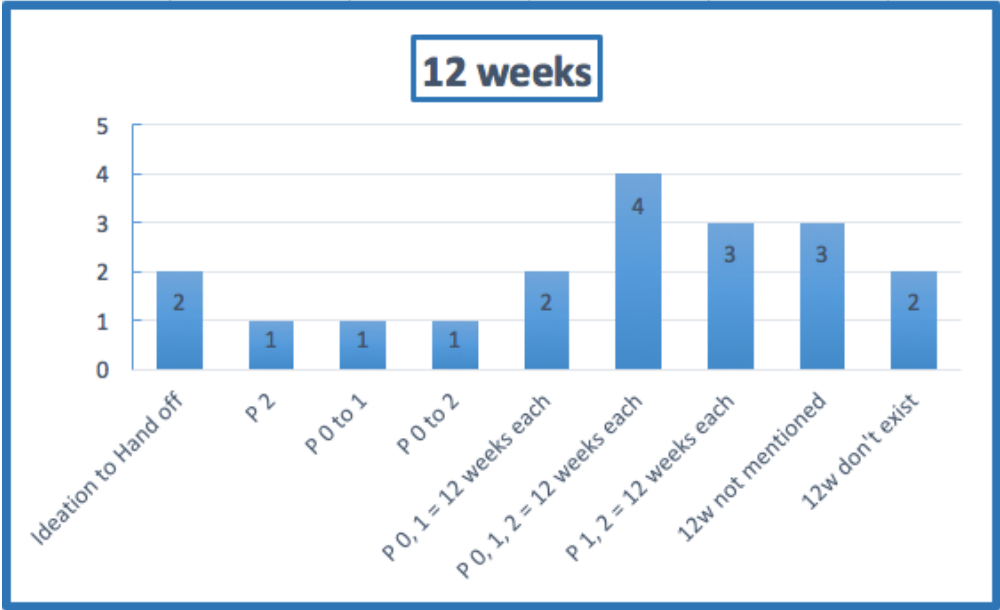
Figure 9. The interviewees' different definitions of the 12-week innovation process at AT&T Foundry.

As figure 9 shows, everyone except three interviewees (12w not mentioned) discuss the 12 weeks, which shows that this value is well known at the Foundry. The reason why three people do not talk about the 12 weeks could either be lack of awareness or simply something they chose not to talk about in the interviews.

5.2.3. The combined view of the innovation process at AT&T Foundry

We have analyzed data from the first 23 interviews and put together a figure that shows, in general terms, how people at AT&T Foundry work in their innovation projects (we call it the innovation process at AT&T Foundry). This innovation process should not be seen as a rigid framework; it rather helps to get an understanding of how the majority of the staff at AT&T

Foundry work. A first version of this figure was shown to the five staff members of the Foundry that participated in the second round of interviews. In this round the interviewees had the opportunity to add, remove or edit the figure of the innovation process, resulting in figure 10.
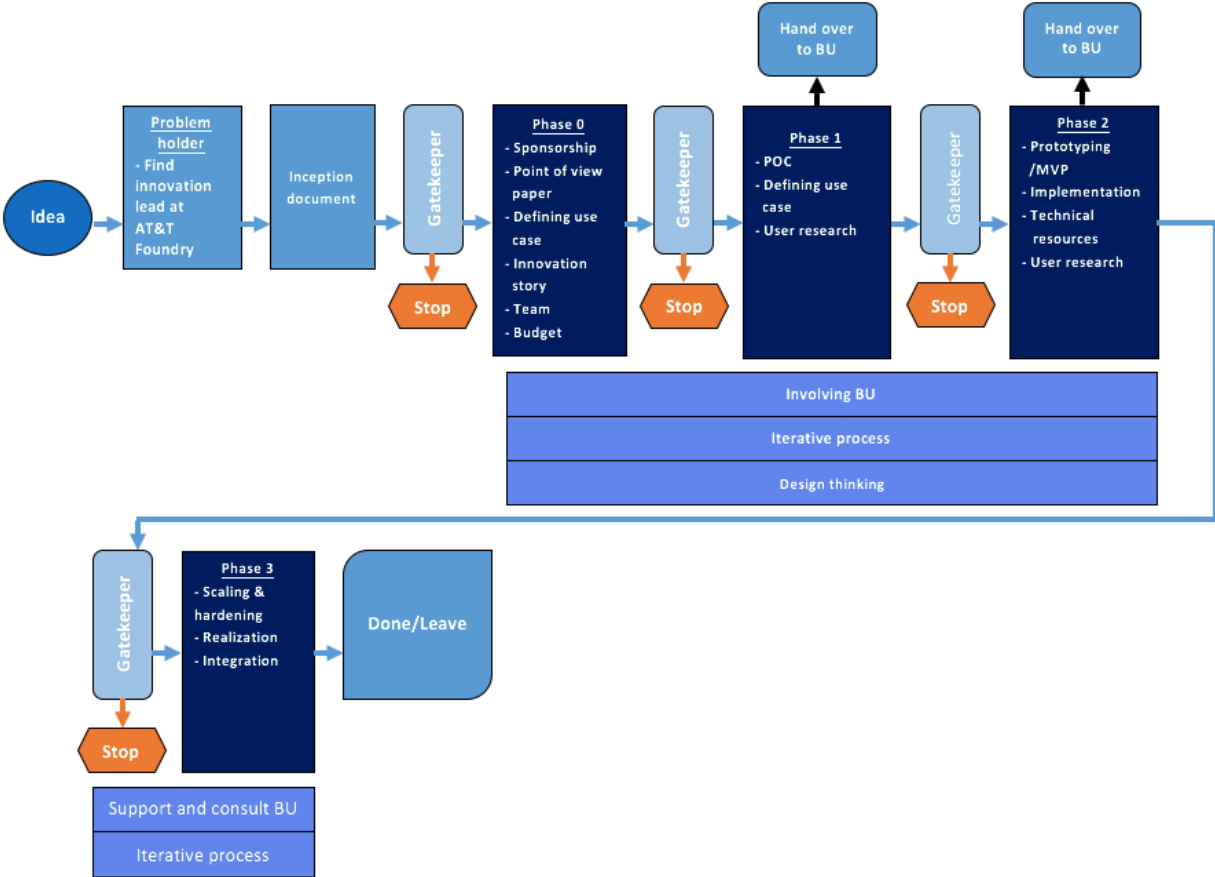
Figure 10. The innovation process at AT&T Foundry based on the interviews.

The innovation process starts with an *idea* and there are several sources of emergence of ideas. They either arise internally by any staff at AT&T Foundry, or externally through a BU (Business unit), through The Innovation Pipeline ("TIP", which is an online crowd-sourcing platform where AT&T employees can share new ideas in order to drive innovation (internal document), or by customers or startups. Depending on the idea, and where the idea comes from, a *problem holder* within the Foundry is identified. Either the problem holder becomes the *innovation lead*, or he/she finds a suitable one. An important part of being an innovation lead is to be responsible for taking the idea further in the innovation process and to set up a project team. Further, the innovation lead formulates an *inception document*. The document provides a reference point throughout the whole project for the project team. It includes the

objectives of the project, whether or not it needs funding, the potential impacts of the project, a description of which BU will sponsor the project and project milestones. In order for the project to move forward, the next step in the innovation process is for the project to go through (what we call) a *gate-keeper* evaluation. This gate-keeper consists of a senior person at AT&T Foundry who gives feedback and discusses the idea with the innovation lead. This gate-keeper is supportive and encouraging and lets all projects proceed to the next phase, as long as they are aligned with an AT&T BU. It is important to notice here that by gate-keeper we do not refer to strict go/kill decision points, similar to those that Schilling (2013) describe. The "gate-keeper" here is rather the rules set by the director, he/she explains: *"I don't gate, I make the rules, once people know the rules they don't need to come and ask. I change the rules based upon what people tell me or what I need to do. If I insert myself everywhere, I get a lot of 'me' everywhere, which is not what I want. I want them, not me. It is about them. But there are very clear rules. Everybody knows the rules nowadays. This is about building an environment that seems dynamic, open, collaborative and free".*

The project then enters *Phase 0,* which consists of a point of view paper (the paper includes a statement of industry or technology trends), defining use case (the understanding of user need and the way to solve that specific need), describing the innovation story, team and budget. After phase 0, the project enters a *gate-keeper* again for judgment. At this point, the gate-keepers consist of the BU and the project team, who make a decision whether or not the project is allowed to move into the following phase. The next phase of the innovation process is *Phase 1* and just like in Phase 0, our interviewees mention that it can include work of defining use case. Furthermore, it consists of a proof of concept (in order to make the project more tangible and test the achievability of the project) and user research. There is an option in Phase 1 to either hand over the project to a BU or proceed to the *gate-keeper.*

Again the gate-keepers consist of the BU and the project team. From this step, the project has two options to move forward. The first option is to stop the project and the second is to allow it to move forward into the next phase. The upcoming phase in the innovation process is *Phase 2* and includes: prototyping/MVP, implementation, technical resources and user research. Just like in Phase 1 there is an option to hand over the project to a BU before the gate-keeper. After the second phase the project needs to go through yet another gate-keeper and this time, it is anyone outside the Foundry e.g. the BUs. *Phase 3* is the last phase in the innovation process and consists of scaling, hardening and realization. Ideally at this stage the

Foundry members are consulting and engaging with BU in order to keep strategy and vision of the project, before they are considered done and leave.

Having an iterative process, applying design thinking and involving BU are activities stretching from Phase 0 until Phase 2. The iterative process continues until phase 3, however, design thinking ends in Phase 2. Lastly, after Phase 2, "involving BU" instead becomes a way for Foundry members to support and consult the BU when producing the product.

By studying literature on innovation processes and innovation management we have noticed some features in the innovation process at AT&T Foundry that are aligned with theory. To start with, Grant (2010) explains that linking invention to commercialization can best be done by designating a product champion. The product champion is preferably the person who initiated the idea, because he/she is usually committed to his/her innovation. That way companies run a bigger chance to capture, direct and exploit individual's drive for achievement and success. Which is aligned with how AT&T Foundry chooses a problem holder and/or innovation lead. Furthermore, we have previously explained the director's view on his/her role regarding "gate-keeping", which is much alike how Steiber and Alänge (n.d) describe, middle managers in entrepreneurial environments. They describe that it is important for middle managers to restrain their own ideas and instead facilitate and build the opportunities for their employees to take initiatives, work, develop and test their own ideas. Styhre and Sundgren (2005) agrees with Steiber and Alänge (n.d) and argue that managers should encourage openness to new approaches: focusing on processes as outcomes, rewarding creativity and innovation, permitting autonomy and risk taking, providing demanding and intellectually challenging environments and building feelings of self-efficacy.

5.2.4 Benefits and challenges of today's way of innovating at AT&T Foundry

5.2.4.1. Trust and Iteration

As describing the innovation process, the interviewees identify benefits and challenges of the way they work at the Foundry. Among the interviewees, it seems to be an overall appreciation of the amount of trust that they are given and the possibility to be iterative in their work process. Interviewee 8 explains that: *"Having an iterative approach of innovating helps me learn and understand more"*. Having an iterative approach when innovating is aligned with

the lean start-up model by Blank (2013). He claims that by including the lean start-up model in a company it encourages experimentation, customer feedback and iterative design.

The employees at the Foundry are given a large amount of trust, which seems to motivate them. Interviewee 6 explains: *"A big reason why my projects run smoothly has to do with personal motivation, to see that my work effort leads to something valuable"*. Interviewee 8 and 10 point out that a part of the success of the Foundry is that it allows the employees to choose and work on projects that they are passionate about. We see a parallel between the people's motivation and passion and Grant's (2010) suggestions. He proposes that a product champion should be designated to an invention in order for it to reach commercialization. This person should be the one who initiated the idea because he/she is usually committed to the innovation, hence the company runs a larger chance to succeed.

To further relate to the fact that employees are allowed to work on projects that they are passionate about, this implies that they can choose to work on pretty much anything and Interviewee 12 explains: *"We are supposed to be here, doing things that nobody else does, nobody else can do or don't have time to do, or are equipped to do or perhaps don't even know about. The only things we work on are the gaps. AT&T is a large corporation with a lot of knowledge so why would we work on something that someone from AT&T internally could do? "*. Yet, according to all interviewees (except for Interviewee 13 and 15) the projects always have to be alignment with a BU of AT&T. This implies that there are some restrictions considering project selection after all.

5.2.4.2. Permission to fail
Interviewee 5 highlights that the innovation process at the Foundry benefits from the permission to fail. Interviewee 3 and 17 highlight that it is better that problems are occurring in phase one (or as soon as possible) in order to pivot quickly and in order to create a better final project. Interviewee 3 explains that because the company is trying to move away from a long horizon view of things, to a model where it can do very quick innovations, it is important to fail often and fail fast. Realizing early failure is a part of the iteration process and it is encouraged at the Foundry, the interviewee continues. If we are to believe Schilling (2013), this implies that there is a need for some kind of gate-keeping. Schilling (2013) explains the idea of the Stage-Gate system as to realize risk of failure early in order to minimize the risk of failing big. By gathering technical, market and financial information, go/kill/hold or recycle-

decisions can be made by gate-keepers. Another author who stresses the importance of failing fast is Blank (2013) who explains that using the lean start-up model reduces the high cost of developing a product that run the risk of failing. He highlights the importance of being able to fail fast and to learn on a continuous basis.

5.2.4.3. Gate-keepers

When interviewing the staff there seem to be different opinions regarding the actions taken by gate-keepers at AT&T Foundry, which can be described by the two following quotes; Interviewee 22 explains: *"The Foundry directors do not tell the people what to do. That is what sets us apart. If people want to do something they are supported to do that as long as it is aligned with the AT&T business units and makes sense for us to do"*. Interviewee 20 has a different view on gate-keepers: *"There will always be gate-keepers. If something doesn't go anywhere it is because it has been stopped. However, sometimes you just don't know who the gate-keepers are"*. Afuah (2003) explains that gate-keepers are people who possess knowledge about the firm and the outside world. Because AT&T and Ericsson are two large corporations there is reason to believe that in the cases where the Foundry employees do not know who has stopped a given project from proceeding, it might have been a decision made by upper management who want to assure that the projects are aligned with an AT&T BU. Interviewee 1 explains: *"The VPs are usually deciding if they want to take the project into the next phase and/or into the business, or not. The senior people at AT&T Foundry are not making that decision, but they can approve kicking them off"*.

A few interviewees mention gate-keepers and refer to certain senior people or VPs. As an example, Interviewee 16 mentions two of the Foundry employees by name and explains: *"X and Y can be considered gate-keepers, they give me feedback; positive, neutral or negative"*. However, when talking to these senior people, they claim that either there are no gate-keepers, or passive gate-keepers in house. We got the impression that the senior people of AT&T Foundry did not want to entitle themselves as gatekeepers. This seems to be because seek to build a certain culture with little bureaucracy and much freedom. Furthermore, because we had studied the stage-gate model prior to the interviews, this model might have affected how we phrased our follow-up questions and how we interpreted the innovation process at AT&T Foundry.

Cooper (2008) explains that gate-keepers may let poor projects proceed to the next stage. Because the Foundry wants to speed up the innovation process, the risk of proceeding with "poor" projects that could take a wrong direction would be too time consuming. According to internal documents, the Foundry is a place to rapidly bring innovations to the market. There is a possibility to proceed with projects that take a wrong direction, especially since the first gate-keepers in the process let all projects go through. However, the projects will probably be stopped by the external gate-keepers after phase 0, in case they are considered "poor" projects.

When analyzing each interview individually, there is only one interviewee (Interviewee 14) who entitles the BU a 'a gate-keeper'. Even though nobody else entitles them gate-keepers, our overall understanding is that one of their tasks in the innovation process is to make decisions on go/kill/hold or recycle projects based on the requirement that the project must be aligned with the business of AT&T. However, because we showed figure 10 to the people at the follow-up interviews this gave these interviewees a chance to decline this claim of ours.

5.2.4.4. Business unit fit
A challenge that most interviewees (except Interviewee 13 and 15) accentuate, has to do with BU-fit. The interviewees explain that their projects must fit into a BU at AT&T, and that it is difficult to find the right BU to convince, engage and involve since AT&T is a big company. If there is no interest for the BU to support the project it is difficult for the Foundry employees to start the project. It is also challenging to find the right champion that sees the value in the project and has the power to make it happen within the bigger AT&T.

Furthermore, Interviewee 7 stresses the lack of connections with the BUs. Once people finalize what they think is the right end of a product they need to deliver it to the right BU. But the missing link here is that they don't have strong connections with people in the right BU. There are thousands of people at AT&T and the likelihood to find the right champion/VP that sees the value in what people are making, and has the power to make it happen in the bigger AT&T is small, the interviewee concludes. From our understanding, it is easier to reach the right BU when the Foundry staff have personal relationships with the BUs at AT&T.

In the cases where a project has reached the state of "hand off" to BU, it is time for the Foundry staff to decrease its involvement. At this state another challenge has been identified by Interviewee 9, 10 and 11. They argue that people from the Foundry do not care enough about the project after hand off, or they do not support or consult the BU after hand off. The employees who highlight this challenge underline the importance of staying involved with projects after this phase. By staying involved they can keep the original strategy and vision of the project. Furthermore, Interviewee 11, 13 and 14 agree that this is essential in order for the innovation to become successful.

While the interviewees in the paragraph above stress the challenges of BU-fit, others underscore the benefits of BU engagement. Interviewee 1 explains that the BU provides feedback that potentially improves the products and Interviewee 4 says that even though BU-fit can be challenging, the BUs are helpful as they support Foundry projects. Interviewee 24 describes that it is hard to do "Ericsson-stuff" at the Foundry and Interviewee 18 is complaining about the lack of involving BUs from Ericsson. Even though the Foundry is not set up to bring projects into the organization of Ericsson, there is reason to believe that there are opportunities for Ericsson to gain more insight and benefits by engaging more Ericsson BUs in the projects.

5.2.4.5. Timeframe
Another challenge of today's way of innovating at AT&T Foundry that has been identified by a few interviewees (Interviewee 3 and 8) concerns the time frame. Interviewee 3 explains: *We have time constraints on the projects, which might hinder us to work on certain projects*, and Interviewee 8 says: *"Time-wise it is a challenge, there is a pressure to reach deadlines"*. Further, Interviewee 3 indicates that the time constraint (the 12-week process) hinders them to work on certain projects. This implies that the idea of having a 12-week innovation process may hamper innovation at the Foundry to some extent. However, it is important to bear in mind that AT&T Foundry is not an R&D department, but a place to rapidly bring innovations to the market (Internal document).

Even though the interviewees above stress the challenges of the time constraint, other interviewees, such as Interviewee 2 perceive it to be successful: *"The 12-week time frame is a good thing, it is short enough in order to not waste too much money and if it turns out not to be successful, then at least, you tried"*. Because the mission of AT&T Foundry is to

accelerate launch of new services and products to market three times faster than traditionally within AT&T, it could be argued that Interviewee 2 has a proper approach to the 12 weeks time frame.

5.2.4.6. Three phase process

Interviewee 10 is supporting the idea of using the suggested innovation process, with phase 0-3 as a guideline (no strict order) and explains that there have been successful projects coming out of AT&T Foundry where the three phases have been followed (fig. 10). However, the interviewee underscores that this process is difficult to replicate. The interviewee further explains that in order to make replication happen continuously, more senior people are needed at the Foundry. This interviewee believes that one of the Foundry's challenges is that in those projects where people follow the phases, they do not fulfill them properly: *"they do not do the full cycle, for example they don't make the BU understand and engage from the beginning"*. If we are to believe this interviewee this might hinder some projects from reaching their full potential. Interviewee 21 discusses the phases as well and claims: *"This is a fair way that represents a lot of the projects we have worked on here. We don't want something rigid. Because then it will be hard for us to work in all those areas that we do. We are all about spontaneity. Therefore, processes can be a hinder. However, if someone has trouble getting started it can be good"*. Furthermore, this interviewee explains that there are some obvious steps that Foundry staff, almost always, have to go through (such as user research).

5.2.4.7. Design thinking

Design thinking is a recurring topic in the interviews and has been identified as challenging by a few. Interviewee 7 claims that once an idea is chosen, people are iterating and prototyping in a bubble instead of testing it and bringing it outside of the Foundry. People are guessing and making many assumptions, the interviewee continues. Interviewee 19 is surprised that in some projects people do not do any user research at all. Because there is a freedom and flexibility of driving projects in ways that suit each individual user research is not a requirement, which could explain this lack of customer involvement. If we are to believe Kolko (2010) user research is always important when innovating and he explains that user research gives the designer a vast amount of data, which helps him/her to better understand the problem he/she is trying to solve. This is confirmed in the lean-start up methodology as well, where Ries (2011) explains that if you understand your customers, you are able to improve the products.

Further, Interviewee 2 points out that design thinking can be difficult in this technical environment and Interviewee 12 explains that there is only one employee with a design background hired at the Foundry today and further expresses a desire to bring in more designers that are trained in design thinking. Because there is only one designer hired at AT&T Foundry, it might be an explanation why the interviewees find it difficult to work with a design thinking approach in their projects. Several employees highlight the challenge of having a design thinking approach, which implies that there clearly is a need for training in design thinking among the employees who do not have a background in design thinking. Based on the innovation process (fig. 10), there is a desire to use design thinking across the entire process. According to Hemlin, Allwood and Martin (2004), new influences tend to enhance creativity (such as new personal contacts, new knowledge and ideas, or new environments). Therefore, it could be argued that education in design thinking should be encouraged at AT&T Foundry.

5.2.4.8. Communication

Finally, communication has been identified as one of the challenges in the innovation process. Several interviewees have mentioned that there have been difficulties in finding good communication tools to use in day to day communication.

> *"We need to improve the communication between the two companies and the Foundry"*
> - Interviewee 19

Interviewee 1 explains that there is a challenge to get everyone to use the same communication system for sharing information regarding the projects and Interviewee 14 explains: "We *are encouraged to use a certain project management and communication tool today but at the moment it is not continuously updated. But it is getting better"*. Interviewee 14 continuous and describes how the communication around the projects has changed over the years: *"We have had Monday morning meetings for a long time now. Today those are more about housekeeping, about what is happening here this week and what visitors are coming. We used to talk much more about the projects, we used to think a lot more about how to communicate the project's status and project progress to the Foundry"*. Interviewee 12 confirms this and says that: *"The stand-up meetings do not exist to the same extend today"*. This implies that there used to be a face-to-face forum for continuous updates on each

employees' project. It can be assumed that the old way of using the Monday meetings constituted for a chance to improve collaboration activities and engage in each other's projects in a different way than they do today. If we are to believe Goodman and Dingli (2013) it is important to have idea management systems (such as face-to-face meetings) in innovative environments where ideas can be uploaded and discussed. Hence, it could be argued that AT&T Foundry should use the time on the Monday morning meetings as a forum for communication around the projects.

5.2.4.9. Summary of benefits and challenges

The table below shows a summary of whether the interviewees perceive each element to be beneficial and/or challenging in today's way of innovating at AT&T Foundry.

Themes	Benefit	Challenge
Iteration	√	
Trust	√	
Failure	√	
Gatekeepers	√	
Business unit fit	√	√
Timeframe	√	√
3 phase process		√
Design thinking	√	√
Communication	√	√

Figure 11. Benefits and challenges of today's way of innovating at AT&T Foundry.

5.2.4. Contributing factors that affect the success of the innovation process

By asking the interviewees to describe successful and less successful factors that have affected their projects, both differences and similarities in their answers have been identified. We asked the interviewees these type of questions because Ericsson is facing a challenge in how to scale and replicate this concept of co-creating with its customer (as discussed in the problem description), and we are hoping that these answers can provide a hint of what to include or exclude in future set-ups.

5.2.4.1. Culture and communication

Interviewee 3, 12 and 15 mention that communication among the employees is essential in order to successfully innovate and Interviewee 6, 7, 12 and 20 highlight the importance of

communicating with the BUs and partners. Interviewee 12 explains that engineers have a tendency to communicate in ways that are difficult to understand for a non-technical person. Therefore, communication and presentation becomes important in order to make e.g. the BUs understand what they are working on.

Collaboration and culture are, according to many of the interviewees, affecting innovation process success. Interviewee 6, 11 and 13 describe that if the innovation process is struggling there are usually collaboration issues. These issues often concern project team size or differences among team members. Culture is being discussed in several interviews and Interviewee 2 underscores: "*To gather everyone in the same culture is difficult since the director is changing often and because there have been changes in the organization structure*". Grant (2010) discusses the importance of creativity when fostering innovation and explains that creative people tend to desire to work in an egalitarian culture. Further, he explains that creativity is not only something a firm can access by hiring creative people, it requires attention to human interaction, communication, playing, prototyping and experimentation. Hence there is reason to believe that it is important for managers at AT&T Foundry to pay attention to the evolvement of the culture at the innovation center. This becomes especially important since the director is changing often, as Interviewee 2 underscores.

5.2.4.2. Problem oriented approach

A success factor that most interviewees point out, in order for projects to proceed through the entire process and land in a BU or launch, is to be problem oriented and understand customer need. Interviewee 5 explains that it is necessary to focus on the problem that needs to be solved and Interviewee 7 highlights the importance of taking a step back to explore and try to understand the user need. Interviewee 20 continues by saying: "*Start with the problem, not the solution*". Finally, interviewee 7, 9, 10, 15 and 22 all emphasize that it is important to know the users and communicate with them.

These results imply that the interviewees' opinions are aligned with some of the theoretical framework. Burgelman, Christensen and Wheelwright (2004) explain that, to realistically develop technological breakthroughs that satisfy market demand, it is important to understand the problem.

5.2.4.3. Failure

Throughout the interviews most interviewees express that there is no such thing as a non-successful project. They explain that even though an innovation never launches in a market or lands in a BU, the project itself is successful because they always learn new things. Interviewee 4 explains: *"Nothing is less successful, you hit the wall, and then you pivot and try to do it in a different way."* and Interviewee 3 describes his/her view on failure: *"Failure is not necessarily a loss. Being able to learn from your mistakes and incorporate them into the next iteration I would say is the foundation of innovation"*. Furthermore, Interviewee *5* explains how the set-up with Ericsson as a sponsor allows the people working at the Foundry to fail: *"Here people are allowed to fail. You won´t find this in a traditional P&L set-up. You can´t design an innovation center around a P&L"*. This attitude towards failure goes in line with Blank's theory of the customer development process. Blank and Dorf (2012) highlight the importance of treating pivots and failure as a normal part of product development and argue that it should be looked upon as ways of improving.

5.2.4.4. Freedom and flexibility

For several interviewees, freedom and flexibility is important in succeeding in the innovation process. Interviewee 11 explains: *This way of working offers a freedom and flexibility to move around and be creative"*, and Interviewee 13 describes: *"The reason why it works for me is that there is no structure. Freedom and flexibility encourages me in my work"*. Interviewee 17 agrees by saying: *"Failing is ok here, failing quickly and go back and look at what you did wrong allows you to succeed in the end. I think it is important to be able to adapt quickly and make changes and not fear failure. I would like more things to be run out of my own interest and not have to look too much on "who the sponsor is" and that person's interest"*. As discussed above, Grant (2010) highlights the significance of creativity when fostering innovation. He argues that in order to be creative, it is important to offer enough space and resources that allow innovators to be spontaneous, experience freedom and flexibility and have fun. We believe that the interviewees' attitude towards freedom, flexibility and failure, combined with the Foundry location (in Silicon Valley) and the resources provided by the sponsorship from Ericsson, is encouraging a creative environment at AT&T Foundry. Steiber and Alänge (n.d) support the flexible approach. They argue that to cope with constantly changing times and markets, companies need to be adaptable and adopt a proactive culture. Therefore, it is suggested that companies need to focus on speed and efficiency, which requires having employees who are willing to be agile and flexible.

5.2.5. Summary of 5.2. The innovation process of AT&T Foundry

At AT&T Foundry, there is an "official innovation process" (fig. 8), however, the empirical findings reveal that employees at AT&T Foundry have a different picture of the innovation process. Hence, in reality the innovation process is different from what is being officially communicated. There is no universal way of working and each individual works in a way that suits themselves and the uniqueness of each project.

Moreover, there is a total time frame of 12 weeks to deliver prototype solutions. Although it was found that the interviewees define the 12-weeks process differently. There is an ambiguity in the definition of the 12 weeks process and in communicating them. We have also identified that there no longer are any face-to-face forums where the projects can be discussed. Ochieng and Prince (2007) discuss face-to-face forums and explain that internal communication is important. They explain that if there is a loss in the face-to-face communication it can lead to misunderstandings and loss of non-verbal signals and lead to difficulties in achieving mutual trust and confidence. If we are to believe these authors, we see a need for AT&T Foundry to improve the internal communication.

The innovation process at AT&T Foundry is not to be mistaken with the traditional stage-gate process since the internal gate-keepers at AT&T Foundry are passive in their decision-making. On the other hand in the traditional stage-gate process there is a decision of go/kill decision point at <u>each</u> stage and the purpose of these go/kill points is to control the project quality and to ensure effectiveness and efficiency manner of the execution of the project (Schilling, 2013).
We have also discovered that because there are many different BUs and VPs within the bigger AT&T, it is problematic to find the right VPs to approve and sponsor the innovation projects. Therefore, there is a need of having the right contacts at AT&T in order to find suitable VPs and BUs.

In this chapter we ended by discussing the importance of having functioning communication, gather everyone in the same culture, having a problem oriented approach, accepting failure and introducing a culture of freedom and flexibility, when innovating at AT&T Foundry. According to Grant (2010) balancing creative freedom with discipline and integration is what

brings value to the firm. It is challenging and the key is market need, that is, focusing on solving practical problems rather than spontaneously create inventions.

5.3. Co-creation at AT&T Foundry

Because this case study is focusing on how Ericsson and AT&T are co-creating, we gathered data on the interviewees' perceptions of this matter. As defined earlier, co-creation is about doing a project together and to involve external stakeholders to contribute to the innovation process. Another feature of co-creation is that a company can combine the best core competences or skills and resources with one or more organizations to become more competitive (Kazadi, Lievens and Mahr, 2016). The results and our analysis on how Ericsson and AT&T are co-creating are presented below.

5.3.1. Description of the co-creation at AT&T Foundry

Regarding co-creation Interviewee 20 explains: "*This year there is a goal to have one project together with Ericsson but in general there is an announcement to do as much collaboration as possible*". This interviewee explains that there can be much collaboration at the Foundry, however co-creation is about doing a project together. At AT&T Foundry, representatives from both companies work under the same roof and sometimes they work on projects together and other times separately. We believe that to co-create it is important to be observant on- and ensure that the Foundry is not just a coworking space, but a place for co-creation.

Furthermore, Interviewee 7 explains: "*What I know about my co-workers' projects are information I gain during lunch or if our managers come up to me and ask me if I could join and work on projects with them. I know more of the projects that people hired by the same company as me work on because we share more with each other*", and Interviewee 3 says: "*There is a lot of lunch talk and everyone knows that there are people around the office with different domains of expertise. If we run into problems where we know someone else possess the expertise, we would grab them and ask for their opinion. There is a lot of interaction in that sense*". This implies that many times the only interaction the employees have with people from the other company are brief interactions. Even though more incentives for collaboration across companies probably would enhance co-creation, brief interactions should not be underestimated, at least not if we are to believe Katz and Tushman (1979). They claim that

interactions can be intentional and unintentional interactions, with information exchange that support and develop collaborative relationships. High level of brief, informal interaction is valuable when innovation is a high priority.

The interviewees opinions on co-creation activities within the Foundry vary to some extent. Interviewee 19 describes: *"In an ideal world it would be cool to co-create, but the collaboration does not work"*. Further, Interviewee 20 adds: "*We don't co-create but we are getting there slowly"*. This interviewee claims that the reason to the low degree of co-creation is that there is not an atmosphere at the Foundry where co-creation is enough encouraged on a project level and continues: *"We have not embraced the fact that we are Foundry people first and AT&T and Ericsson people second"*.

In contrary to the opinions in the paragraph above, Interviewee 1, 8 and 23 explain that Ericsson employees work on projects together with AT&T employees. Interviewees 2, 7, 8, 10, 12, 15, 21, 22, 19 and 20 all stress that project teams are constructed based on skills, interests and knowledge, rather than whether the people are hired by AT&T or Ericsson. Interviewee 22 explains his view on the co-creation: *"When there are people from the other company working in a space that is relevant to what I am working on; I bring them in as any other staff. I don't see them as being external"*, and Interviewee 20 is reasoning in a similar way: *"I have used resources from Ericsson in my projects, but not because they are from Ericsson. It rather has to do with the people and their skills that are suitable resources"*. This implies that people from the two companies collaborate occasionally on a project level, but there are no incentives for the vendor (Ericsson) and its customer (AT&T) to co-create on projects.

> *"In the few occasions I have collaborated with people from the other company I think someone from our company might as well have been involved"*
> - Interviewee 15

Because this is the attitude among the Foundry members it seems to be an opportunity loss. Instead of basing project teams merely on skills, knowledge and interest, it could be argued that the team setup should include more diversity. If there were more project teams with members from both companies, it may be possible for Ericsson and AT&T to learn from the collaboration partner and seize the co-creation opportunities that the Foundry offers.

According to Ely and Thomas (2001), group diversity enhances the group work effectiveness. A heterogeneous group is more likely to produce a broader set of approaches to a solution or task and this stimulates the group discussion, which leads to high quality decisions. Furthermore, Grant (2010) suggests that managers need to put together diverse work groups in order to exploit differences. These authors' views on diversity act for arguments to involve both Ericsson staff and AT&T staff in the projects in order to enhance diversity.

"Most people work only in AT&T teams"
- Interviewee 14

Interviewee 18 remarks the imbalance of people at the Foundry (regarding Ericsson versus AT&T employees) and Interviewee 8 highlights the imbalance of people as well and says: "*There is an imbalance of people here and we have few combined projects. Most projects are only AT&T and there is a majority of AT&T-staff*". An explanation of the imbalance of people might be because Ericsson's expectations of the co-creation seem not to be as high as those of AT&T. However, because there are not as many people hired by Ericsson (as by AT&T) to engage in projects it seems like Ericsson is missing out on potential co-creation activities.

Finally, Interviewee 25 explains that the two companies think in different ways which makes co-creation hard. Interviewee 7 explains that it is important to have a management structure when collaborating: "*In general, by collaborating you can do so much more, you get so many more ideas, more brains and more hands. But you need a management structure to do this. I mean tools and infrastructure necessary to communicate*". Further, Interviewee 24 stresses the organizational differences regarding the hierarchy of AT&T and Ericsson which have an impact on the work of AT&T Foundry: "*The biggest differing thing between the companies is that AT&T has top-down flow and Ericsson is flat. These two fundamental things make it hard in general to work at the Foundry since the two companies think in different ways*". Moreover, Interviewee 23 explains that there are differences in the expectations of AT&T Foundry: "*Everyone has their own vision about what the Foundry is. AT&T has its expectations and Ericsson has other expectations*". Romero and Molina (2011) highlight that it is essential to define the need of what type of partnership to establish, to make the aim, goals and requirements clear in order to work in a trustable way. Therefore, we believe that if two companies want to co-create it is important to, from the very beginning, state a clear aim and goals in order for both co-creation partners to work in the same direction and have the

same expectations. From our understanding, AT&T Foundry has three primary goals (see pg. 38) that the employees' time revolve around. However, based on the quote mentioned above the Foundry employees seem to focus more on the goals of the separate companies rather than the common goals of AT&T Foundry. This was confirmed earlier by Interviewee 20 when he/she said: *"We have not embraced the fact that we are Foundry people first and AT&T and Ericsson people second"*.

5.3.2. Knowledge sharing and communication

Exchanging knowledge is known to be a source of competitive advantage (Lee et al. 2015) and an outcome of collaborating in innovation processes (Gassmann, 2006). Interviewee 3 explains: *"I find it valuable to collaborate with people from the other company, they have technical skills that are hard to find at our company, simply because we do look at different layers of the whole telecommunications problem. Working together with the service provider which we do is good when solving certain problems"*. This implies that the interviewee is positive towards exchanging knowledge with people from the other company because it could potentially help them solve their problems. Antikainen, Mäkipää and Ahonen (2010) are discussing innovations and say that most innovations take place when boundaries of knowledge constraints are crossed. Further, they emphasize that knowledge does not diminish when shared with others. Interviewee 4 describes the benefits of accessing skills (that her/his own company lack) from people hired by the other company as well, and explains that it allows her/him to learn more. Even though these employees seem to be happy about, and willing to share knowledge, there are employees that do not agree;

"We do not share enough here. People share on a one and one basis with one another."
- Interviewee 21

Interviewee 4 expresses that there is a low degree of knowledge sharing: *"I know little about my co-workers' projects, but I want to know more. I have general knowledge about their projects and this knowledge is partially based on where people sit at the Foundry"*. Furthermore, Interviewee 3 discusses*: "The biggest problem when innovating is knowing how much knowledge sharing we should do. There is a certain underlying paranoia in knowledge sharing. There is always a question of 'am I sharing too much' because it could keep you from being as creative or innovative as you could have. But we have sort of come to this agreement of sharing on a higher level"*. By listening to these interviewees describing the low

degree of knowledge sharing we believe that there are opportunities for them to share more. Sáenz, Aramburu and Rivera (2009) describe that through interacting and sharing knowledge with others, individuals increase their capacity to define a problem or situation, which can enhance the innovation capability and produce innovations and new knowledge. Further, Zhang and Jiang (2015) and Lee et al. (2015) explain that there is an increasing correlation between companies' competitive advantage and successful knowledge management. If we are to believe Dodgson (1993), trust is important in collaboration relationships in order to facilitate communication. Therefore, it can be assumed that sharing knowledge with one another is a matter of lack in trust among the employees. Goodman and Dingli (2013) support Dodgson's view on trust and explain that having idea management systems (including virtual or face-to-face meetings, a paper based 'suggestion-scheme' and an intranet where ideas can be uploaded and discussed) in innovative environments is important. All this, the authors explain, require trust. However, as mentioned earlier, there is a challenge in finding communication tools that everyone uses at the Foundry. Thus, it is hard to determine whether there are trust issues within the Foundry or not.

To conclude, Hendriks (1999) sees a parallel between motivation, knowledge sharing and communication tools. He says that if workers are not motivated to share knowledge, they probably will not be motivated to use the tools facilitating knowledge sharing either.

5.3.3. Pros and cons of co-creation

Because co-creation is essential to this study we want to stress the topic further. Therefore, we asked the interviewees about their attitudes towards co-creation. Based on the section above the overall impression we got is that there is an opportunity of improving the co-creation between Ericsson and AT&T. Even though the co-creation activities seem to be lower than they possibly could be, the interviews reveal that there is a positive attitude towards co-creation. There is a significantly larger amount of pros of co-creation compared to cons if we are to believe the interviewees (see answers in appendix 2). The staff are open to new ideas, they learn from each other and they are sharing information. Interviewee 1, 2, 3, 4, 7, 8, 10, 11, 12, 14, 20 and 19 all highlight the benefits of learning from-, and sharing information with one another. Interviewee 2 explains: *"We need to have diversity and different mindsets in order to build a product",* and Interviewee 4 says: *"Through the Foundry we can get in contact with people with different skills in order to learn more"*. Interviewee 10 agrees by saying: *"Co-creation is a good thing and it is about bringing two companies and their talents*

together. The more diverse people who want to have an open conversation the better it is. AT&T needs Ericsson and the other way around. The Foundry's obligation is to make that work". Furthermore, Interviewee 20 discusses the many benefits of co-creation at AT&T Foundry: *"There are lots of benefits by just being in the same building, such as knowledge sharing and having informal conversations"*. Chesbrough (2003) argues that, to easily move ideas between two actors could be considered as an advantage when developing new products or services, which acts for an argument that AT&T Foundry facilitates interactions among the employees.

Some more strategical benefits have been identified as well. Interviewee 6 explains: *"Having exposure and transparency in the relationship gives us perspectives of what could be valuable for us to work on and vice versa"*. This implies that the two companies get an insight into where the partner is focusing their attention, which could be of importance for the firm success. Interviewee 4 highlights the benefit of having a partner set-up where one of the partner is sponsoring the innovation center: *"Thanks to their financial support we get the opportunity to explore and pivot and don´t need to be worried about ROI"*.

Interviewee 11 refers to when he/she wants to communicate with Ericsson staff outside of the Foundry and says: *"It helps us to not do a formal "thing" about talking to someone about a problem. Ericsson staff at the Foundry can help us cut through corporate bureaucracy"*. This quote implies that the communication between AT&T Foundry employees and the organization of Ericsson is facilitated by collaborating at the Foundry. However, because this is the only interviewee with this opinion it can be questioned whether or not it actually works.

Co-creation does not only bring benefits to the two companies. Interviewee 22 highlights one paradox of co-creation at AT&T Foundry: *"Ericsson is getting insight and they know exactly what their customer cares about. They understand where AT&T's head is at, where they invest and spend their money and how they expect their vendors to work. They have a lot more insight than the competitors that are not in the Foundry-system."* But he/she also says: *"It is an unfair expectation to think that this is purely mutually beneficial relationship. One gets more benefits out of this than the other. In this case AT&T probably is more beneficial"*. This interviewee is highlighting a risk of collaboration, which Schilling (2013) discusses as well. She explains that one party may expropriate the other party's knowledge, without giving much in return. Furthermore, Interviewee 2 is highlighting an example of the uneven

relationship of benefits: *"The brand of AT&T is very well set in the Foundry, but not the Ericsson brand"*. This implies that AT&T is benefiting more from brand recognition compared to Ericsson. Moreover, Interviewee 1 explains: *"We share IP while working on projects together and Ericsson does not want anyone who works on a Core-Ericsson IP project to come and work at the innovation center. The projects which are being worked on at the innovation center are things that help AT&T"*. Again, this is an interviewee who points out that the innovation center is more beneficial for AT&T than for Ericsson. However, according to this interviewee, it seems like Ericsson has taken an active choice not to work on certain projects because they are protective of their IPs. The IP protection could be a challenge in the pursuit of co-creation.

If we are to believe believe Gnyawali and Park (2011) there are challenges for firms who partner up with a purpose to innovate. They explain that this kind of relationship may bring higher level of tensions and it may increase the risk of losing knowledge to the partner which might turn the partner into a strong competitor. Hence this might be a reason why Ericsson is being protective. Furthermore, in regards to working on the company's core projects, Lichtenthaler (2015) highlights a challenge with open innovation. He explains that companies may want to keep technological core competencies inside the company and therefore it may limit the outflow of open innovation.

Interviewee 6 argues that when co-creation is forced by upper management it might hinder them from working on other projects: *"The foundry's yearly goals have to do with us collaborating with the other company on x- numbers of projects. We might have to collaborate on things that might be of interest of the both companies. To do that just because we need to reach goals from upper management might take away the natural way of working. It might be an unnecessarily constraint"*. Interviewee 19 has a similar view: *"Ideally we could do crazy things together, but unfortunately it comes down to KPI-questions. There is a barrier from both Ericsson and AT&T that we should be working on certain projects. We should be doing more cool, crazy stuff"*. On one hand, we agree with Interviewee 6 and 19 that AT&T Foundry should be a place to work on 'cool' projects without constraints from upper management. This reasoning is based on the reason why AT&T founded the innovation center. In the beginning of this chapter we describe that the reasons the innovation center was founded was for AT&T to disrupt from the inside out and to have a space to take risks with new innovations and ideas. On the other hand, because we want to enable Ericsson to realize

and take advantage of the opportunities that evolve through their co-creation with AT&T, we believe that more encouragement of co-creation activities could increase these opportunities. This could for instance be done by creating more common goals regarding working on projects together. Today there is a goal of having one project together.

Interviewee 16 describes that: *"Ericsson does not have enough engineers employed at the Foundry and if a goal is to actually come up with products, there is a need to have people such as developers who can build it, not people who can sell it"*. Because both Ericsson and AT&T are technology intensive companies, it can be assumed that the observations made by Interviewee 16 affect the co-creation activities: If there are not enough engineers hired by Ericsson it is not strange that more AT&T employees are engaged in the technology intensive projects (hence those projects do not become co-creation projects since we have defined co-creation as 'doing a project together'). Therefore, it could be argued that if Ericsson would hire more engineers at the Foundry it might increase the co-creation activities (this argument is tainted by technology bias among the interviewees).

5.4. Summary of 5.3. Co-creation at AT&T Foundry

According to our empirical findings and analysis there is a goal to do one project together. Other than that, co-creation is not encouraged on a project level. The project teams are constructed based on skills, interests and knowledge, rather than whether the people are hired by AT&T or Ericsson.

Because there is an imbalance of people, and because there are not as many people hired by Ericsson as by AT&T to engage in projects, it seems like Ericsson is missing out on potential co-creation activities. Kazadi, Lievens and Mahr (2016) suggest that an advantage with co-creation is that a company can combine the best core competences or skills and resources with one or more organizations to become more competitive. If we are to believe Kazadi, Lievens and Mahr (2016), and if there were more project teams with members from both companies, it may be possible for Ericsson and AT&T to learn from one another and seize the co-creation opportunities that the Foundry offers in order to become even more competitive.

When it comes to knowledge sharing, some interviewees are negative and describes that they do not share enough at the Foundry. On the other hand, other interviewees are more positive towards exchanging knowledge with people from the other company because it could potentially help them solve their problems. This can be related to the paper by Camelo-Ordaz

et al. (2011) where it is described that the innovation work is improving in organizations that encourage knowledge sharing.

5.5. The opportunities that evolve through AT&T Foundry

Because we are studying the co-creation between AT&T and Ericsson we believe that they want to benefit from being engaged in an innovation center together. Therefore, we digged deeper into the outcome of having AT&T Foundry. In this section we will present responses on the value Ericsson and AT&T appropriate from the co-creation at AT&T Foundry.

"Ericsson gets a seat at the table with AT&T!"
- Interviewee 24

The quote above is Interviewee 24 explaining what value Ericsson is able to reap from being a sponsor and collaboration partner at AT&T Foundry. "*It means that Ericsson is able to listen, learn and to provide a voice in an innovation context*", Interviewee 24 continues. Throughout the interviews this has been the common picture around what Ericsson gets by investing resources in AT&T Foundry. Interviewee 18 clarifies that: "*through the Foundry, Ericsson gets an insight in coming technological trends. To have a 'seat at the table' is the idea of the Foundry, and is how the collaboration is set-up*". The idea is not to involve BUs from Ericsson, Interviewee 24 explains. By having a 'seat at the table' Ericsson becomes more familiar with AT&T's changes and development and by being responsive to that, Ericsson can offer AT&T better products, which is beneficial for both companies, interviewee 1, 7, 12 and 22 explain. Several interviewees have expressed that AT&T needs to transform and it can not do it alone. Therefore, its vendors need to change as well, Interviewee 1 explains: "*AT&T wants to become a software company and Ericsson can help bring in an outside perspective*" Interviewee 14 claims that, as a vendor, Ericsson has a better position than its competitors thanks to this collaboration.

Several interviewees mention relational benefits that Ericsson gets by this Foundry set-up. Interviewee 1, 12, 23 and 24 highlight that relationships are being built between Ericsson and AT&T. This relationship may help both Ericsson and AT&T in future negotiations among the two, and it is a way for them to brand themselves together, says Interviewee 23. Interviewee 14 agrees and claims that, thanks to the collaboration, Ericsson has a better position than its competitors. Moreover, Interviewee 23 argues that AT&T benefits on short term because the

projects are being aligned with AT&T's BUs. However, on a long term, Ericsson may benefit more, than today, from the relationship.

While many positive things have been said about what Ericsson benefits from by being a sponsor of AT&T Foundry, there are interviewees that have slightly different ideas. Interviewee 18 declares: *"It is an unfair expectation to think that this is purely mutually beneficial relationship. One gets more benefits out of this than the other and in this case AT&T probably is more beneficial than Ericsson"*. Many interviewees agree with this quote and interviewee 1, 2, 7, 22, 23, explain that all innovations created at the Foundry go to AT&T. This is further elaborated by Interviewee 22: *"The vast majority of our innovation or exploration will be within the context of AT&T and some of those will influence the business of Ericsson. But it will not be aligned directly to create a new BU within Ericsson. It is unlikely that something will go back to Ericsson"*. Further, Interviewee 24 says that the Foundry is not set-up in a way where there is Ericsson BU-involvement. However, it is interesting that Interviewee 21 says: *"If any time along the way an Ericsson BU says that it wants to be a part of it, it could"*. This implies that there are opportunities for Ericsson to benefit more from the Foundry than they do today.

5.5.1. Summary of 5.5. The opportunities that evolve through AT&T Foundry

By being a sponsor and collaboration partner at AT&T Foundry, Ericsson gets a 'seat at the table', which implies that Ericsson becomes more familiar with AT&T's changes and development. It also means that Ericsson is able to listen, learn and to provide a voice in an innovation context. By being responsive to AT&T, Ericsson can offer them better products, which is beneficial for both companies.

In fact, all innovations created at the Foundry go to BUs of AT&T. This is because the projects are being aligned with AT&T's BUs. The Foundry is not set-up in a way where there is an Ericsson BU-involvement. This implies that AT&T benefits in short term, while it gives Ericsson benefits in long term.

To conclude, chapter five has displayed our findings, which we have discussed and analyzed with support in theory. All of the above have given us insights helpful to answer the research question and this chapter constitutes for a foundation for the following conclusions.

6. Conclusion

The purpose of this study has been to investigate how Ericsson and AT&T are co-creating innovations at AT&T Foundry. We want to enable Ericsson to realize and take advantage of the opportunities that evolve through their co-creation with AT&T. Our hope is to make it possible for Ericsson and other companies in the same situation to benefit from discussion and conclusions made in this case study of AT&T Foundry. One research question was presented in the introduction, which we now will answer by comparing the empirical findings to existing theory. The following research question was used:

How do two global companies co-create innovations in an innovation center?
- *A case study on the co-creation between AT&T and Ericsson at AT&T Foundry in Palo Alto*

6.1 Concluding remarks

In this case study we have identified a few ways of how the two investigated companies co-create innovations. At AT&T Foundry this year, there is a goal of doing one project together. This is the only incentive we have found when it comes to do a project together (with people hired by respective company). Only occasionally do the project teams at AT&T Foundry consist of representatives from both companies (which is our definition of co-creation). This is mainly due to the imbalance of people in terms of which company they are hired by. Furthermore, project team set-up is rather a matter of combining the right skills, interest, knowledge and passion. However, we can conclude that the innovation center AT&T Foundry facilitates co-creation between Ericsson and its customer AT&T and it allows for the two companies to benefit from brief interactions and knowledge- and information sharing, which can lead to co-creation. AT&T Foundry is set up in a way that provides Ericsson with a seat at the table, therefore co-creating activities are not prioritized, and no BU from Ericsson is involved in the projects at AT&T Foundry.

Furthermore, in section 5.2 we mapped out the innovation process at AT&T Foundry, which shows how Ericsson and AT&T are co-creating innovations on a project level, at AT&T Foundry. This process is not a rigid framework; it is rather a representation of how many projects are being worked on at AT&T Foundry. In addition, what is being communicated as an 'official innovation process' is differing from what is actually being done.

Because we want to enable Ericsson to realize and take advantage of the opportunities that evolve through their co-creation with AT&T we have (based on the employee's views) identified several outcomes that Ericsson benefits from by being a sponsor at AT&T Foundry. Ericsson gets a so called 'seat at the table', which means that Ericsson is able to listen, learn and to provide a voice, in an innovation context. Moreover, by having a 'seat at the table' Ericsson becomes more familiar with AT&T's changes and development and by being responsive to that, Ericsson can offer AT&T better products, which is beneficial for both companies. Finally, through AT&T Foundry, relationships are being built between Ericsson and AT&T.

6.2. Recommendations

In order for Ericsson to seize more opportunities that evolve through AT&T Foundry, we recommend AT&T Foundry to balance out the employees (in regards to employees hired by Ericsson respectively AT&T). Furthermore, to increase the co-creation opportunities, we recommend AT&T Foundry to establish goals of doing more than one project together (in regards to employees hired by Ericsson respectively AT&T). Even though AT&T Foundry is not set up in a way that innovations are being brought into the organization of Ericsson, we have discovered an opportunity for Ericsson to engage their BUs in the innovation process.

Lastly, we suggest that the 'innovation process at AT&T Foundry' can be used as a guideline in case this concept of co-creating with a customer is to be scaled and replicated. If so, it is important to remember that the innovation process shall not be seen as a rigid framework, it has to be adaptable to each project. By communicate the innovation process at AT&T Foundry to the employees, it can help them get started in their projects, reach certain milestones and align the projects with an AT&T BU.

6.3 Future research

In this study, we have provided an explanation of our chosen research methods in order for others to be able to use similar methods in other research and in different contexts if wanted. This research covers a single case study where we investigate the co-creation and innovation process at the innovation center AT&T Foundry, Palo Alto and therefore no generalizable conclusions can be drawn. Thus, an interesting area for further research could be to perform similar studies on a larger sample of innovation centers. Furthermore, it would be interesting

to do similar studies at (an) innovation center(s) located in a different geographical location with a different ecosystem. This would be interesting in order to come up with generalizable conclusions regarding how companies can co-create innovations.

At AT&T Foundry, services and products go through the innovation process and in the end they are being handed over to a BU for commercialization (while AT&T Foundry involvement decreases). How these services and products are being received at the organization of AT&T, or potentially could be received at the organization of Ericsson, would be interesting to study in future research. Furthermore, we describe that each project needs to be matched with a suitable VP, which can be problematic. Hence it would be interesting to do a study on how to find and secure relationships between suitable VPs and people within AT&T Foundry (or at similar innovation centers).

Moreover, because many ideas are presented to- and arise within AT&T Foundry we suggest that a topic for future research could be to examine how the prioritizing or the "screening" process of ideas at AT&T Foundry works.

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8. Appendix

8.1. Appendix 1 - The innovation process of AT&T Foundry

Interviewee, anonymous ID	Description of the innovation process at AT&T Foundry today	Benefits and challenges with the innovation process	Success factors that affect the innovation process	Less successful factors that affect the innovation process
1.	There is an innovation "process" with phase 0-3. Each phase within the innovation process takes 12 weeks. The Phases are more like a guidelines. They need to be adaptable and able to change. The innovation process depends on the specific project. Ericsson is using design thinking & lean start-up	Pro: Innovate 3 times faster than before; 12 weeks (Concept to commercialization). Pro: We get feedback from the BU -> to make the product better. Cons: Often the products are to early, before the market is mature. Challenge: That everyone use the same system to keep all updated	Timing of a project	Ericsson do not want anyone work on a core-Ericsson IP project in the Foundry. IP becomes a big barrier, people gets frustrated
2.	It is flexible, everyone manage their own projects. Dynamic -> work with several projects at the same time. There is a 12 week process. I try to apply design thinking. We make MVP and prototypes, evaluate user feedback and iterate. Project groups depends on people's different skills. I do user research to understand the problem and the users in order to come up with a user-story and storyboard. At start I document everything into an inception document. You need OK from a BU	Challenge: to be more collaborative across the companies. Challenge: Design thinking can be hard in this technical environment	To be passionated. A good team culture. It is running more smoothly now because the problems are coming from higher up in the business unit or from Internal AT&T	When people don't want to take risks with projects. If people ask for ROI. Lack of support resources. Too big of a project. To gather everyone in the same culture is difficult since the director is changing often and because there have been changes in the organization structure. If the expectations of the project is a mismatch, e.g. between the technical developer and the engineer
3.	Before:12 week cycle, today it can be longer. We have multiple projects going on. Make my own structure (loosely based on kanban). An iterative way of learning and working, try to always learn. Failure is not necessary a loss, learn from what you have done ->that's innovation. We do quick innovations, fail fast. We try to be very flexible in the way we build the product and we keep communicate channels open throughout the process	Challenge: When there is little commitment in the projects. Challenge: The project must fit within the BU. Challenge: Human factors, e.g. you need to have everyone on the same level. Challenge: We have time constrains on the projects, which might hinder you to work on certain projects. Con: the administrative work around IP-protection limits from making innovative stuff	Need to have good communication among the employees. Having right timing. The innovation story	E.g. no strategic fit or not big enough business. Fear of sharing too much knowledge can hamper creativity/innovativeness
4.	It is a dynamic work, changes depending on project. Difficult to follow a certain structure because there are parameters changing week-to-week. Try to manage the projects in 12 weeks, but it is not good in all situations. We must be able to pivot and prioritize. We can work across the business units	Challenge: To interface with the BU. Pro: We can get a lot of support from the BU. Con: If the BU is not interested, difficult to start a project	We have to be disruptive and create conflicts in order not to be working on boring projects	There are no such factors, you hit the wall, then you pivot and try to do it in a different way

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5.	The purpose of the Foundry is to de-risk the technologies for the larger AT&T Put the right project in the right BU We connect the outside world (e.g. start-ups) with the inside world Can't just be an engineer, you must understand user view, the business development Innovation does not happen by process. Happens by random interactions The process is different in each project, if you don't recognize that you fail Free work at the Foundry, allowed to choose projects based on passion	Pro: Free work at the Foundry, allowed to choose their project based on passion Pro: people are allowed to fail	Need to have people who think outside the process Focus on: "What problem am I trying to solve?" Focus on: "What is the solution for that problem?" Having an alignment between the technology and the problem at the BU	When the BU don't what their specific solution
6.	Its not scripted that you have to follow the steps. Although there are some obvious formal steps we need to follow. 1. You need to identify the problem. 2. It must be aligned with what AT&T wants Im developing a framework for myself in order to follow a good work ethic. And to make sure I'm productive every day I use Scrum	Pro: Personal motivation to see that my work effort leads to something valuable	Spending a lot of time understanding what the problem is before finding a solution for it. Communicate your idea. Make others understand and do some marketing The amount of trust that has been given to me means a lot for my motivation	Having too many people on the project team: Identifying what each individual was working on was sometimes difficult. Maybe because we didn't spend enough time thinking about why would anyone from AT&T be interested in this.
7.	To have relationships with people in the foundry helps the innovation process It is a 12 week process with iteration. Each iteration could be a project in itself The most important thing is to be flexible. The Foundry is a flat organization There is a need for design work in terms of keeping the user in forefront and the mindset when we are creating these solutions We have a conversation and we decide where we want to apply design work or design thinking and how We create a plan and then execute I have a set of frameworks that guide me. I adjust them depending on project & who I'm working with Make sure your innovation has market product fit		Need design thinking in terms of keeping the user in forefront in the mindset when creating solutions Use frameworks from design school at Stanford Huge value in communicating with the end user Value in communicating with BU at an early stage	
8.	3 month projects Don't have a certain structure when working but I follow certain steps The work is flexible, iterative and ad-hoc depending on the solution that is needed Business model canvas or scrum are used Often projects are build upon what teams like to do Most commonly the person who formulated the idea is leading the project but that's not very important here.	Pro: the iteration help me learn and understand more Challenge: the imbalance of people, few people from Ericsson Challenge: a pressure to meet deadline Challenge: influence people who were not commited to the idea from the begining Challenge: the BU must be interested in the project Challenge: technical challenges sometimes	Learn through failure I think our time frame of 3 months is enough	

9.	There is a three phase process that is flexible Pivot quickly Each phase is 12 weeks The BU is a part from the beginning There is an attitude that nothing fails We talk about what we have learned in each phase The Foundry is working like a start-up Structure is not good for the Foundry, but flexible frameworks could be beneficial We do innovation in context, i.e. we have to stay align with the BU	Challenge: find the right BU Challenge: it can be difficult to reach out to a BU in AT&T since it is a big company, you need personal relationships Challenge: to get everyone on the same page Challenge: We are not too many people here -> better communication	Need to have a high level of integrated BU in the projects Having flexibility to change and iterate, not push everything through You need to be involved in the whole process in order to make is successful Timing Open minds Know the users Bring in the best people into the project Understand the business point of view	There are misunderstandings in the communication of the technology and the use case
10.	There are phases that I follow more or less (Phase 0-3), there is no strict order, you can mix the steps Need to solve user problem and make an impact Involving BU in phase 0, educate them along the way People need to be passionate about the project they work on Make audience interact with demoing and prototyping	Challenge: people might not care about what happens in the production phase Challenge: If people work in phases, they do no do the full cycle Challenge: to replicate the phases in future projects Pro: don't have to care about the funding at the Foundry	Must be committed and passionated about your project Must have more senior people at the Foundry Must be able to listen to people, social engineering Engage the BU from day one to build trust Everyone must feel engaged You need to understand user need You need to be competitive, keep focus	
11.	The closest thing that I follow is the Design thinking Within design thinking we learn "Don't say: No, but. Say: Yes, and!" Prototyping goes on throughout the whole time Find internal support and opposition After Hand off, we try to stay involved (with the BU and all of the sub-teams within AT&T). At least from a leadership or advisory role	Challenge: I wish I had more time and resources to do design research	Do constant iteration. Rethink your assumptions, read new info Do not get sucked into business as usual, break out of your comfort zone This way of workinf offers a freedom and flexibility to move around and be creative Understand what the BU want	It can be challenging to cooperate with people that are different Not knowing what the strategic vision for that business unit is
12.	There is a natural rhythm of 12 weeks. A good way of not getting off track & to communicate your work	Pros: I think we need to make people passionate and growing and to be a little bit uncomfortable so we put them in positions where they can succeed Challenge: This is a fair way that represent a lot of our projects we have worked on. But we don't want something rigid. Because then it will be hard for us to work in all those areas that we do If you have something this repeatable, you wouldn't have a foundry like this. We are spontaneous If you look at the process like this, it may be very time consuming Challenge: We could take in more designers that are trained in design thinking	Do constant iteration. Rethink your assumptions, read new info Do not get sucked into business as usual, break out of your comfort zone This way of workinf offers a freedom and flexibility to move around and be creative Understand what the BU want Communicate within the Foundry and with the BUs	

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13.	I don't understand what you mean by innovation process? I don't follow a certain structure	It feels like we are trying to impulse structure on something that is not. There is no clear process 1-4. It might die at 2.	Freedom and flexibility encourages me in my work. An innovation "process" is successful if the technical part works	Most challenges has to do with people and cooperation

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14.	Don't use any frameworks, different framework depending on project Apply closing thinking When you put a structure to innovation, it slows it down Too much process makes innovation into corporation, which can be bureaucratic I see the innovation process in phase 0 - 3 Early involvement of BU 12 week process	Con: measuring projects might have a negative impact on people's innovativeness. It might not encourage them to fail Con: there can be timing problems Challenge: there is a risk to push innovation, we don't want to become an R&D department	Geography and location To be able to do the project in time Working together in the office Cross-functional perspectives are important Communicate the idea BU needs to sponsor Have different types of people Company culture	Everything is political when working in a democratic and cross-functional big company
15.	I suppose I roughly follow some kind of framework that include problem identification and formulating a POC But sometimes I realize that I'm on the "wrong path" so I need to be flexible and iterative	Pro: The project should be problem oriented.	I am not familiar with design thinking Empathy is important. Talking to the problem owner I work in an iterative process that is agile, which allows you to bring structure to work on something no one has worked on before.	There needs to be communication and collaboration You need to be interested in learning
16.	I do not follow a structure at all Unless a VP actually sponsors a project it's almost impossible to work on it The 12 weeks projects are not as accurate anymore	For me there is no pro, but for the foundry it is good marketing	Project X was successful only because it came from a VP. Because they were motivated enough	A lot of projects are stopped due to things such as budget limits We need more engineers who actually can build things
17.	I didn't know that there exist innovation models/frameworks Failing is ok here, failing quickly and go back and look at what you did wrong allows you to succeed in the end Our projects start with a problem from the BU You always need to find a fit in a BU We always have to have a use case and a story	Challenge: to invoive the BU and have them invoved from the beginning Con: most engineers, would like to have more designers	You always have to have a use case Need to have a creative way of working Be able to try new stuff Being able to adapt quickly and make changes No fear of failing It is important to have a person in charge of the project	
18.	Always focus on Design thinking Include BU in an early stage It is ok to fail and we want to fail	Con: No Ericsson BU is being involved Con: Imbalance of people (majority of AT&T staff) Pro: IP- protection is overall no hinder	We don't want KPI on sales because then that's going to compensate on technology Having both emotionally intelligent people (emphaty) and structured people	
19.	There is no process It is hard to do something good in 12 weeks You need to feel that it is something special with an idea Direction and innovation does not fit togheter	Con: the 12 weeks are just an illusion Challenge: we need to be more disruptive, e.g. in innovation, culture, management Con: when giving things to the BU, it does not work Con: there is a gap on how to take the ideas into production	You need to have good engineers in the team You always need to update the BU of what they do in the project	When the project is not aligned with the BU, and when you work with a BU you must follow a certain structure
20.	Frameworks are only guidance, they should never dictate what you do Don't use tools, I think they are a distraction for me	iterations are important	Start with the problem, not the solution. The problem with having a solution first is that you attach yourself to a given answer, you constrain yourself. You want to get attached to solving the need If you want to Hand-off anything it has to be from day one. Include a business unit from start Have weekly meetings with all our partners	
21.	Because we are an innovation center we can work on the gaps (ideas)			
22.	People at the Foundry choose themselves what projects to do		The most successful entrepreneur understand what customers need and how to satisfy the demands	
23.	12 weeks from ideation to handoff Not all projects goes through all iterations Imposing a structure to the Foundry, not helpful since there are too many types of projects The most imporant thing is to be flexible User research does just happen sometimes and not in all projects	In some projects at the Foundry people do not do any user research		
24.	Each phase is 12 weeks, not the whole process Imbalance of people	Challenge: The challenge is that it must be something strategic that AT&T wants, in order to get them involved and to get enough visibility Challenge: to do "Ericsson-stuff" at the Foundry		

8.2. Appendix 2 - Co-creation at AT&T Foundry

2. Description / Interviewee, anonymous ID	Description of co-creation at AT&T Foundry	Pros of collaborating with the other partner	Cons of collaborating with the other partner
1.	Ericsson and AT&T work on projects together. Imbalance: 5 from Ericsson and 20 from AT&T. Ericsson employee can work with AT&T employee	We can share IP. We are open to each other. We learn from each other	Ericsson does not want anyone else work on core Ericsson-IP
2.	Choose project group depending on skills. We should collaborate more. We used to have stand-up meetings every morning, which was a good way of interacting. By sharing information we could help each other in a good way. It is challenging to gather everyone in the same culture, partly because of a lot of organizational changes and frequent change of director. Challenge: to be more collaborative across the companies	All have different backgrounds, crossfunctional teams. Share information. The more collaborative, the better. We have low title-walls. We need to have diversity and different mindsets in order to build a product	The brand of AT&T is very well set in the Foundry, but not the Ericsson brand
3.	There are a lot of interactions, but also self-driven work. You need to adapt to the innovation lead. There can be many different opinions on how to manage projects. People from Ericsson has valuable technical skills. Working together with the service provider which we do is good when solving certain problems	Everyone possess different knowledge, good at collaboration. Everyone is open to new ideas, value others opinions. There are people with different areas of expertise that give different perspectives	There are challenges with knowledge sharing, paranoia in how much to share, which can hamper creativity
4.	There are opportunities for collaboration. We are open with our ideas, sometimes more than we should (IP). I know little about my co-workers projects, If I knew more I believe it could foster collaboration	Can get in contact with people with different skills in order to learn more. It is good that Ericsson is at the Foundry to support an collaborate. Thanks to their financial support we get the opportunity to explore and pivot and don't need to be worried about ROI	No cons with collaboration
5.	The Foundry was a part of a larger agreement. Ericsson does not expect much out of the Foundry	Part of the success is the model (of collaboration) since it frees the Foundry to operate independently. Here people are allowed to fail.	
6.	I have not done too much collaboration with people from the Ericsson side. We have different goals	The relationship gives us perspectives of what could be valuable for us to work on and vice versa.	Having to collaborate with them on x- numbers of projects just because we need to reach goals from upper management. We might have to collaborate on things that might be unnecessarily.
7.	It is on a person to person basis, it is not a question of AT&T versus Ericsson. I get info about the other company-projects e.g. during lunch. You need to have good management structure for collaborating (tools). Not everyone here is trained to be collaborative. Tools and infrastructure necessary to communicate are important for collaboration	Enjoy collaboration in general. You get more ideas, more brains and hands working. You learn a lot from collaboration and about different people's styles	It's hard to get people to reply to emails, meet up, gather in the same room, communicate. Before there was a more closer realationship between Ericsson and AT&T, now there is a gap, a maturity problem. People who had good contacts left the Foundry, the link into the bigger AT&T is missing

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8.	We are in part working together. We have few combined projects Only a handfull of people work together Team structure depends on the availability Collaboration is needed in the environment of the Foundry AT&T and Ericsson are working together, but not fully aligned Most projects are only AT&T There is an imbalance of people here. A majority of AT&T-staff	By collaborating: get early feedback on ideas and learn Good to foster collaboration and to work as a team when creating product	Imbalance of employees of Ericsson and AT&T I would like to see more people from Ericsson here If you don´t reach right people, the project would not start
9.			
10.	Should co-create more, but has more to do with the people and not the structure of Foundry	Co-creation is a good thing, brings the two companies together The more diverse people, the better It brings the talent together, which can be successful	The communication could be better There are lot of politics around co-creation
11.		Ericsson has good resources and technologies that we can tap into Greatest minds from their company can support our projects They have a different view and sometimes it helps to get a different perspective It helps us to not do a formal "thing" about talking to someone about a problem. Ericsson staff at the Foundry can help us cut through corporate bureaucracy	
12.	I have never seen two companies successfully working on a project here Team set-up) merely goes by topic, not by companies Productiveness is more important than who is in the team (from which company) If any time along the way Ericsson says that they want to be a part of a project, they could	Ericsson has put excellent people here. Ericsson has a different view. For instance, They do customer research	
13.	I don't think of the people as coming from either AT&T or Ericsson It is visible that you are dealing with two large corporations with their own policies etc.		
14.	Most peole work only in AT&T teams AT&T work more with domain 2.0 and Ericsson with traditional Foundry-work Sometimes, only Ericsson people are working in a project The internal communication is getting better, today we use trello to be updated Internal monday morning meetings (however these are less formal & we talk little about the projects & their progress)	Working cross-functional might foster a specific culture. It drive technology faster The more diversity the more successful	No cons with collaboration They used to share more information about their projects to each other

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15.	It is not a feeling of that we are one big family / There are culture differences between us / In very few occasions I have collaborated with people from the other company / In those cases I think someone from AT&T might as well have been involved		
16.	People co-create in different project groups, personally I do not at the moment		Ericsson does not have enough engineers here / We should work together on projects that matter to the relationship between the two actors (e.g. 5G technology)
17.	Would be good to have regular meetings with the decision makers, nice to have a forum where we can brainstorm with AT&T and Ericsson	Frequent communication is important	
18.		AT&T needs to transform, which it cannot unless its vendors do. That's why its important for AT&T that Ericsson is transforming	When you co-create it becomes very political
19.	AT&T has their expectations and Ericsson has theirs / It is a complicated space / The collaboration does not work / Everyone is open minded in the Valley and willing to share knowledge / Everyone has their own vision about the Foundry it is more of a co-working space where people work on their projects	Ericsson is providing the infrastructure / People are willing to share and are open	Ideally we could do crazy things together, but unfortunately it comes down to KPI-questions / Need to improve the communication between the 2 companies and the Foundry
20.	We don't co-create but we are getting there slowly / We haven't created an atmosphere where we are welcoming co-creation enough / In general there is an announcement to do as much collaboration as possible. Although there are challenges to do it, which is mostly IPRs / I have used resources from Ericsson in my projects, but not because they are from Ericsson. It rather has to do with the people and their skills that are suitable resources	Knowledge sharing / Having informal conversations	Actual execution is a challenge. Just being in the same building doesn't really change the relationship between the two companies that much / Telcos are unused to co-create so it's scary for both companies
21.	We don't put together project groups depending on Ericsson vs. AT&T employee, rather depending on skills, interest and knowledge / We don't share enough here. People share on a one on one basis with one another	Ericsson and AT&T are changing, technological and organizational. There is an opportunity to jointly do something together / If we go into a space where Ericsson sell into AT&T we don't have a chance. But if we go into a space where competitors sell to AT&T or a completely new space, that's where we have the opportunities. It is better if one of us has an interest in the field. You're not attacking an existing business. E.g. help Ericsson get into a new business	There are no downsides at all for us in this Foundry / I don't think we will ever get over the challenge of disruption with Ericsson
22.	When there are people from the other company working in a space that is relevant to what I am working on, I bring them in as any other staff. I don't see them as being external / I don't have access to anyone at the other organization (outside of the Foundry). But people at the Foundry work as intermediaries / Internal resources and staffing shows the dynamics of the expectations within Ericsson around what they expect to get out of the Foundry	It is an unfair expectation to think that this is a purely mutually beneficial relationship. One gets more benefits out of this than the other. In this case AT&T probably is more beneficial	
23.	I work on projects with both Ericsson & AT&T people / Co-creation is on a person basis, not Ericsson vs AT&T		Would be better to have more communication with BU at Ericsson
24.	Ericsson is a flat organization and in order to get things done (that benefits Ericsson) someone more senior should be involved in the BU. As it is now too many people need to be "convinced" / The two companies think in different ways, which make co-creation hardWe are not working on innovation togbetter, but we are trying		

8.3. Appendix 3 - The opportunities that evolve through AT&T Foundry

3.		
Description	**Outcomes for Ericsson**	**Outcomes for AT&T**
Interviewee, anonymous ID		
1.	Ericsson gets a seat at the table Ericsson can react on what path AT&T chooses to match products Can become more align with one of their biggest customers It is a struggle to know what Ericsson gets out of each project Ericsson may not get a direct effect from the projects within the Foundry the company might benefit from them in the future The Foundry is good for the relationship between Ericsson & AT&T By having an insight in many start-ups in the Valley, the Foundry-staff alerts Ericsson's strategic investment and acquisition so they become aware of the latest trends	AT&T wants to become a software company and Ericsson can help bring in an outside perspective AT&T benefits from the innovations generated by the Foundry almost always Start-ups can come to the Foundry and their work can be implemented in the business, which is why the innovation center is based in Silicon Valley AT&T can be a door to the companies that want to come and try to work with AT&T AT&T Foundry is the gate way and the fastest way to give startups feedback
2.	Ericsson does not get anything strait up from the Foundry Ericsson gets a seat at the table We are not here at the Foundry to invent, but to find new ways to engage with the evolution of the market There is a problem when people at Ericsson do not know what the Foundry is and there is a risk of not being taken seriously and therefore we do not have as much support at we might need	AT&T needs to change how they work. Therefore their vendors need to to the same, they can't do it themselves Ideas are delivered to AT&T, through the Foundry Ericsson can help AT&Tto solve next generation technical problems The Foundry has a good reputation at AT&T
3.	We work in the same area but have different perspectives that both can benefit from	We work in the same area but have different perspectives that both can benefit from
4.		
5.	Ericsson get a veiw of what AT&T is up to "having a seat at the table" Ericsson makes a lot of money on the relationship with AT&T	The foundry has a good reputation (brand) within AT&T The Foundry is changing AT&T's physical workspace and ways of communicating
6.		
7.	Ericsson wants to please AT&T and be aligned with AT&T´s process and know what AT&T is doing since they are a big customer to Ericsson	AT&T gets all the projects/ products that come out of the Foundry Relationships are being built; branding to the outside world
8.		
9.		
10.		The common goal is to figure out how to improve AT&T as an org
11.		Our job is to help the company become more innovative and to create new business opportunities through projects and partnerships And a lot of us have the responsibility to change the image of the company Make the foundry more diverse
12.	Ericsson has never been the innovation story. AT&T is always the story It is important for Ericsson that it is going well for AT&T as a customer There is a commercial relationship between AT&T and Ericsson	Co-creating with a supplier is a success story for AT&T Both companies are changing, technological and organizational. There is an opportunity to jointly do something together There is a commercial relationship between AT&T and Ericsson
13.		
14.	Gets a seat at the table, Ericsson has a better position than competitors Ericsson gets benefits, otherwise they would not renew the sponsorship	
15.		
16.	No project from the Foundry has benefited Ericsson (through commercialized products). So I think this buys Ericsson goodwill Ericsson is hoping to be a first choice of vendor	When AT&T make business they care more about the contract as a whole rather than the actual product.
17.		
18.	Ericsson gets a seat at the table (insight in coming tech. trends) The Foundry has helped us realize that we are disconnected from software Nobody within the Ericsson staff (BU) are interested or enough informed about the products/projects Co-branding (e.g. fairs, events, future cast series)	AT&T has to change and so does its vendors Co-branding (e.g. fairs, events, future cast series)
19.	The Foundry is not allowed to do disruptive things for Ericsson	Want to improve the reputation of AT&T We need people who can bring in disruptive ideas into AT&T, there should be a process to do this "Need to be accepted by the Valley (we need to impress both companies and students) Need to create a repuation that the Foundry innovates and do cool stuff "
20.		
21.	If any time along a project Ericsson says that they want to be a part of it, they could	
22.	It's a benefit for Ericsson because they get an insight in where we focus our innovation resources If Ericsson knows about AT&T (AT&Ts changes and development), Ericsson can offer AT&T better products (by also changing and developing), which is good for both From Ericsson's perspective, it's a minuscular investment to continue to stay as a primary vendor with one of the largest customers that they have. I don't think Ericsson's expectations are as high as AT&Ts on the co-creation. For every five of us there is one or less of them	The vast majority of our innovation or exploration will be within the context of AT&T. Within that context of AT&T some of those will influence the business of Ericsson. But it will not be aligned directly to create a new BU within Ericsson. It is unlikely that something will go back to Ericsson AT&T gets subsidized

23.	Depends on the project, some will give benefit to Ericsson, but less than for AT&T (It would be good to have more communication with the BU at Ericsson) Long term: maybe more benefit for Ericsson, realtionship On a high level: Ericsson has a seat at the table Relationships are being built; branding to the outside world Benefits in negotiations between the two companies	Depends on the project, some will give benefit to AT&T Short term: more benefits for AT&T, AT&T is getting the projects Benefits in negotiations between the two companies
24.	The idea and setup of the Foundry is not to invovle BUs from Ericsson Ericsson gets "a seat at the table", which is the idea of the Foundry AT&T works with start-ups that might get interested in Ericsson in a later stage, which is positive for Ericsson in an indirect way Ericsson gets a good relationship with AT&T There are some marketing benefits	

8.4. Appendix 4 - Interview Guide

Interview guide for all the staff at AT&T Foundry

General questions
1. **What is your name?**
2. **What is your work title?**
3. **Who is your employer (AT&T or Ericsson?)**
4. **Describe your role at AT&T Foundry? E.g. how long have you worked here?**
5. **What are the common goals of the Foundry?**

Innovation process structure
1. **What does the innovation process look like here at the Foundry? (draw on whiteboard)**
   - *Is there anything you want to add that you think is missing here?*
   - *Which factors are necessary for an innovation process to run smoothly?*
   - *What are the challenges you face at the moment within the innovation process and how do you handle them?*
   - *What do you see your role is in that innovation process? (exemplify with one of the projects you are working on?)*

2. **When you work in projects are you following a certain project structure/framework? (do you use a certain innovation model etc.)**
   - *If no, please describe how you work?*
   - *What are the pros and cons on working this way that you do?*

3. **What do you know about your colleague's roles within the innovation process? (e.g. decision makers, project lead)**

Employee projects

4. **Do you work on the same innovation/project from idea generation to launch?**
   - *If not, what happened to this innovation/project before you started working on it (when it was just an idea)?*
   - *If not, what will happen to this innovation/project after you have done your job? (who will you pass it forward to? What will you document? Will you do any follow up on it?)*

5. **Have you been involved with successful (from idea to market launch/landed in a business unit) projects at AT&T Foundry earlier and can you describe those projects (time frame, project group, resources)?**
   - *Why do you think it became a success or which factors were important for the success?*
   - *What did you learn from that project in order to do better in your next project?*

6. **Have you been involved with projects that have been less successful at AT&T Foundry earlier and can you describe those projects in more detail? (time frame, project group, resources etc.?)**
   - *Why and which factors do you think affected the project to be less successful?*
   - *What did you learn from that project in order to do better in your next project?*

Co-creation

7. **At AT&T Foundry, staff from Ericsson and from AT&T are collaborating:**
   - What is your opinion of pros and cons of collaborating on innovations ,with the other actor at the Foundry?

8. **How do you perceive following phenomena at the Foundry; Bureaucracy, IP-protection and IP-rights, and big businesses. (do you feel limited by these somehow?)**

9. **Is there something important that we did not discuss during the interview. If yes, do you want to add something?**

8.5. Appendix 5 - Interview Guide Follow-up

Interview guide for follow up interviews

Innovation process
1. **Based on the innovation process drawn on the whiteboard, is there anything you want to add, remove or comment on?**
- **Would you say that this is a way of approaching the innovation process that is being used at AT&T Foundry?**
2. **Can you describe launched and landed products?**
3. **Is there any BU within Ericsson that is being involved with the projects at an early stage? Why/ why not?**
4. **In earlier interviews you say that you do not "gate" any projects. However, when interviewing others, they imply that the senior people act as gate-keepers. What are your thoughts on that?**
5. **In the innovation process, who is the problem holder?**

Co-creation
6. **Are there any goals that are particularly concerned with the cooperation between Ericsson and AT&T?**
7. **What are the benefits/goals for AT&T and Ericsson to cooperate?**
- **What has Ericsson gained through having "a seat at the table"?**
8. **How come all the projects here at the Foundry are being brought to an AT&T BU and not to any BUs of Ericsson?**
9. **Are AT&T and Ericsson working on projects together**
- **Do you encourage people from both companies to cooperate on projects?**

Overall understanding of the Foundry
10. **What was the initial purpose for AT&T to create the Foundry?**
- **Is it fulfilling that purpose still?**
11. **What are the goals and the vision of the Foundry?**
12. **Are there any concrete measurements on how to measure the outcomes that the Foundry generate on behalf of Ericsson?**
13. **From our understanding, there has not been any commercialized products generated from the Foundry with the Ericsson brand. Is this true?**
- **Are there other ways for Ericsson to benefit from the Foundry (than commercialized products)?**
14. **What kind of resources do you think are important to have at the Foundry (senior/designers/network/background)?**
15. **What factors do you think are essential in order to replicate the Foundry?**