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Supporting the Innovation Process

An Exploration of Informal Control Mechanisms within Product Innovation Processes

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Abstract

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Purpose: This thesis aims to explore and understand the influence of informal control mechanisms within product innovation processes.

Theoretical framework: The innovation process is considered to be an essential source for competitive advantage where innovation processes can be phrased as the organisation's invention, development and implementation of ideas. Social behaviours influence these processes through human interactions. Informal control mechanisms describe unwritten organisational values, norms, behaviours, and beliefs that guide employees' actions.

Methodology: Qualitative single-case study with an abductive research approach.

Empirical foundation: All empirical data was collected via eight semi-structured interviews with employees of different experience levels at the case company possessing a diverse range of roles within the organisation's innovation processes.

Findings: Analysing the empirical data highlighted the employees' understanding of the organisational culture, expectations, responsibilities, experience, and support as well as how they can be perceived as informal means of control within product innovation processes.

Contribution: Our findings indicated that culture acts as a collective informal control mechanism. Whereas expectations, responsibilities, and experience informally influence employees through pride in their expertise, role allocations and informal experience hierarchies, which informally control employees' contribution to the innovation processes. Supportive actions were an influencing control mechanism through experienced employees nurturing the organisational culture. Support was also utilised by requesting support to mobilise influential power. Hence, we contribute to academia by addressing gaps in the scarce literature regarding qualitative studies within product innovation processes and informal control mechanisms.

Keywords: Innovation Processes, Informal Control, Innovation Management, Product Innovations

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1. Introduction

An innovation process is a complex process where informal communication, experimentation, interaction, and knowledge influence the outcome (Henri & Wouters, 2019; Larsen & Bogers, 2014; Pan Fagerlin & Lövstål, 2020; Sandelin, 2008; Thomke, 1998; von Hippel, 2005). With the innovation process being considered a main pillar of competitive advantage (Barros & Ferreira 2019; Brown & Katz, 2011; Crossan & Apaydin, 2009, Schilling, 2020), research has started to form around whether it is the practices, rather than new ideas, that is the central characteristic in the innovation process (Denning, 2012; Larsen & Bogers, 2014). By adopting a broad view on innovation processes, which can be phrased as the organisation's invention, development and implementation of ideas, we dismantle these vivid schemes of events into social interactions that are influencing these emerging processes (Garud, Tuertscher & van de Ven, 2013). These innovation processes are considered to be incused by aspects of both formal and informal control mechanisms (Labitzke, Svoboda & Schultz, 2014). Previous research in this field has further shown that innovation can occur through improvisation and informal interactions (Larsen & Bogers, 2014). Cardinal (2001) elaborates the interplay between control mechanisms and innovation within the pharmaceutical industry, where formal control mechanisms were confirmed with a robust coexistence with informal professional norms, values and activities, which in turn influence the innovative outcomes. Innovation can, as such, be interpreted as a process resulting in an unintentional discovery of patterns through human interaction.

Moreover, organisational control can refer to any formal or informal mechanism or process. Typically, they are used by managers to align employee's capabilities, practices, behaviours and performance with the organisation's goals, vision and financial targets (Cardinal, Sitkin & Long, 2004). Control mechanisms have previously proved to positively affect the innovation process if implemented to enhance communication, cooperation, creativity and decision making (Adler & Chen, 2011; Chenhall, Kallunki & Silvola, 2011; Ylinen & Gullkvist, 2014). On the contrary, studies find a negative impact on innovation when control mechanisms are infused with command and authority (Davila, Foster & Oyon, 2009; Pan Fagerlin & Lövstål, 2020), bureaucratism and centralised decisions (Rijsdijk & van den Ende, 2011), and accounting-based innovation conditions which emphasise profit and margins (Davila, 2000). Informal control mechanisms

describe the unwritten organisational values, norms, behaviours and beliefs that guide the employee's actions within the organisation (Cardinal et al. 2004). The uncodified informal means of control can also be derived from the organisation's contextual factors such as culture (Moreno-Luzon, Gil-Marques & Valls-Pasola, 2013), the communicated strategy (Prajogo & Sohal, 2006) or knowledge management (Hung et al. 2010). However, it is not always easy to distinguish between formal and informal control mechanisms. Simons (1994) levers of control identify the cultural aspect as a lever of control, which might be unspoken and highly informal, or expressed as formal in written codes of conduct. To clarify, what can be considered formal control is often explicitly planned and consciously implemented. Whilst informal control is usually based on unofficial and non-planned social interaction (Tucker, 2019).

Along these cultural and social channels of informal control mechanisms, innovation emerges to shape the development and implementation of different ideas across and within the organisation (Garud et al. 2013; Chesbrough, 2011; Bogers & West, 2012, Larsen & Bogers, 2014). Hence, as the innovation process is regarded as profoundly affected by informal control mechanisms (Larsen & Bogers, 2009; Pan Fagerlin & Lövstål, 2020) and is considered as a vital part of a business' sustained competitive advantage (Besanko et al. 2017; Crossan & Apaydin, 2009; Schilling, 2020), we find it highly relevant to deepen the understanding of the concept and how it influences product innovation processes.

1.1 Problematisation

Studies regarding control mechanisms in product innovation processes mainly focus on formal control mechanisms and management control systems, where the informal control mechanisms are left underdeveloped (Pan Fagerlin & Lövstål, 2020; Sandelin, 2008; Tucker, 2019). However, many earlier scholars have raised awareness about the drivers, processes and outcomes of product innovation (Chenhall et al. 2011; Cohen & Levinthal, 1990; Davila, 2000; Day & Shea, 2020; Holmstrom, 1989; Lerner & Wulf, 2007; Tushman et al. 2010). To our knowledge, a significant amount of the organisational strategy research regarding product innovation processes neglects the impact of human beings, their social interaction and the influence of informal control mechanisms. Furthermore, Stacey (2011) confirms our assumption and argues that there is a scarcity in

understanding how individual human beings' social interaction leads to influential collective patterns.

Moreover, the identified previous studies on innovation processes and control mechanisms have been conducted mainly by using a quantitative approach (see Chenhall et al. 2011; Labitzke et al. 2014; Escrig-Tena et al. 2021). Contrary to the foregoing research, we believe that we can address gaps in the literature to understand further how these factors influence innovation processes through a qualitative case study. Additionally, it is within the organisation's informal interactions and narrative where propositional themes appear, which can aid in the exploration to illuminate the complex architecture of social interaction between human beings in the context of product innovation processes (Larsen & Bogers, 2014). By drawing parallels between Ittner & Larcker (2003) and Kerr (1975), we see that although organisations implement formal control mechanisms with clear objectives, neglecting the informal mechanisms might disrupt the objectives. Thereby, organisational innovation literature needs recognition regarding informal control mechanisms and their impact on innovation processes since only focusing on the formal aspects of control has previously led to unwanted side effects.

To summarise, after reviewing the existing literature on innovation processes and control mechanisms, it reveals significant gaps that remain underexplored in academic research. These gaps can be described as threefold. First, as earlier mentioned, both Tucker (2019) and Pan Fagerlin & Lövstål (2020) stress the importance of further studies in the scope of informal control mechanisms since a large number of previous studies tend to focus solely on formal control mechanisms. Second, we look to add to the scarce literature of qualitative research by uncovering and increasing our understanding of the influence of informal control mechanisms on product innovation processes. Hence, as these control processes are shaped as a collective phenomenon, expressed as highly informal and happening below the radar, it further justifies the qualitative approach (Morse, 1991). Third, within the existing body of literature in the field of informal control mechanisms, authors call in need for further studies, and especially in an innovation process context (Garud et al. 2013; Henri & Wouters, 2019; Longo & Giaccone, 2017; Pan Fagerlin & Lövstål, 2020). This gap is further prolonged by Pan Fagerlin & Lövstål (2020), where large and more stable organisations in mature industries are overrepresented in previous case study research.

The extension of this gap is addressed in this thesis by studying a medium-sized company in an industry that can generally be perceived as more nimble.

1.2 Practical Significance for Strategic Management

Innovation has lately arisen to become one of the most expanding topics in the world of management, where companies compete to be acclaimed as the most innovative in their industry, implying that in order to sustain competitiveness, a company needs to be innovative (Pisano, 2015; Schilling, 2020). Since the process of product innovations has mainly been focused on formal control (Pan Fagerlin & Lövstål, 2020; Sandelin, 2008; Tucker, 2019), previous research has seemingly overlooked the influence of informal control within innovation processes. In other aspects of strategic management, such informal control mechanisms are suggested to play an even more prominent role than formal control mechanisms, implying that these aspects are applicable in innovation processes (Barker, 1993). Exploring the multiple dimensions of informal control mechanisms in product innovation processes stretches current academia in the understanding and implications to strengthen the foundation we stand upon when strategising for innovation. Doing so further increases the awareness of potential factors for organisations and decision-makers to take into consideration when managing an innovation process.

The practical significance in the scope of strategic management lies in an increased awareness of innovation management by illuminating influential informal control mechanisms that may have a more significant impact on innovation processes than previously thought. With many organisations investing a large portion of their budget in innovation activities, this study might help practitioners improve their comprehension of influential informal control mechanisms, which may enable decision-makers to make more informed decisions related to their innovation processes. In addition, by highlighting and surfacing these informal control mechanisms, organisations, managers, and employees can create an awareness and understanding of underlying control mechanisms that may have influenced innovation processes unconsciously. As such, our findings may be helpful in the creation of more complete tools for strategising and controlling innovation.

1.3 Purpose and Research Questions

Based on the introduction and the problematisation, this thesis endeavours to explore the social interplay between employees involved in product innovation processes by studying informal control mechanisms that may influence these processes. By studying these processes, we contribute to the existing body of research when addressing the academic gaps that have been identified by the scarcity in qualitative research within informal control mechanisms in product innovation processes. Moreover, we also contribute to an increased understanding for practitioners in their mission of strategising for innovation. For that reason, the purpose of this thesis is to explore and understand the influence of informal control mechanisms in product innovation processes. To investigate these phenomena, the following research questions have been formulated:

> *How are product innovation processes influenced by informal control mechanisms?*

To answer this question, we also need to identify how such informal control mechanisms manifest themselves in the context of product innovation. For this purpose, we have formulated a second research question reading as follows:

> *Which informal control mechanisms can be identified within the context of product innovation?*

These research questions will be addressed by conducting a qualitative single-case study in collaboration with a Swedish innovation consulting company. Further methodological details for this thesis will be provided and explained in **Chapter 3**.

1.4 The Case Company

Innovation Consultancy Company[1] (ICC) is a privately held innovation consultancy firm and currently employs around 150 people in Sweden and Denmark[2]. Their primary focus is to aid in the innovation processes regarding product and system development for customers in a wide range

[1] Innovation Consultancy Company is a pseudonym and not the case company's real name.
[2] The following data of the case company was acquired from an introductory meeting with ICC's CEO on the 8th of April 2021.

of industries. Thus, ICC mainly employs engineers with different areas of expertise and knowledge. Depending on the project, ICC can either provide consultants working on a project alongside their customer or offer their own in-house innovation team to address any challenges their customers might be facing. ICC pride itself on being a flat, non-hierarchical organisation that focuses on transparency, communication and accountability throughout all aspects of the company. ICC has an innovation model they apply regardless of the project's character. Hence, the model is relatively general, and since projects are vastly different, it emphasises the responsibility of each employee and project manager to shape the processes depending on what is being innovated and developed. ICC does not currently have any predefined guidelines or routines for how to shape the innovation model depending on the context, implying that some informal control is being used to determine the processes in each project. Further reasons and implications for selecting ICC as a case company is described and explained in **3.2.1** "Choice of Case Company".

1.5 Outline of the Thesis

The first chapter is the introduction which introduces the background for this thesis, problematisation, purpose and research questions. The introduction is followed by the literature review. This chapter addresses the literature review and processes central theories and definitions connected to the topics of innovation processes, informal control, and how they relate to each other. A brief argumentation to how our research will provide new insights into this topic is also a matter of the literature review. The methodology chapter will provide the scientific approach to the research design of the study. Components such as research design, data collection, and data analysis process will be thoroughly explained in this chapter. The validity and reliability of the study will also be discussed in this chapter. In the empirical results and analysis chapter, all empirical data collected will be presented and analysed. The inception of the empirical findings regarding the study will also be a proceeding of the results section. From the analysis of our data, we have found the following themes connected to the topic of informal control mechanisms within product innovation processes: culture, expectations, responsibilities, experience, and support. Following the results section is the discussion chapter in which the empirical findings are positioned and discussed in relation to current theories on the topic to add insights to prevalent theories. The concluding chapter summarises the results of the discussion, which are elevated to a general context in terms of theoretical contributions and how these can be applied practically. This final chapter also defines recognised limitations and presents suggestions for future research.

2. Literature Review

The following chapter serves the purpose of creating a theoretical guideline regarding the identified body of existing research concerning innovation processes and informal control mechanisms. The chapter initially introduces some key concepts by explaining and defining the concept of innovation and highlighting different types of innovation processes and strategies. Further on, the concept of innovative organisations and informal control are presented in order to provide a theoretical foundation for explaining the influence of informal control mechanisms on innovation processes.

2.1 Innovation

The outputs of an innovation process can be classified as either product innovations or cost-saving process innovations (Griliches, 1990). To clearly distinguish between product innovation and process innovation is relevant since they deviate from each other regarding the activities and investments made to promote either type of innovation because they have a different economic impact on the company (Medda, 2018). According to the Oslo Manual (OECD, 2005), process innovation refers to the implementation of a new or an improvement of an existing production or a delivery method, thus enhancing and innovating the process of production. Product innovation instead refers to the evolution and production of goods or services classified as new or which have notably better features or fitting a new purpose. For the purpose of this thesis, we will refer to product innovation whenever innovation is mentioned or discussed.

An innovation process is often associated with a specific outcome which can be described as the organisation's path for invention, development and implementation of ideas and solutions. (Garud et al. 2013; Gopalakrishnan & Damanpour, 1994). Throughout the 1980s, the majority of innovation process research circulated around establishing cause and effect links between different stages in the development of innovation (Tornatzky et al. 1983). Leaving the static and narrow view of the 1980s, which mainly focused on calculated cause and effect, shed new light on the seemingly limited understanding of innovation processes (Garud et al. 2013). Moreover, the ongoing saturation of research studying causal links between independent and dependent variables in the processes of innovation revamped in the 1990s into a deeper understanding of the process

of innovation by observing the chain of events that unfolds over time and inferring generative causality (Pettigrew, 1990; Tsoukas, 1989). Even though academic scholars have come a long way since, we still see patterns where researchers overlook the social contingencies in the innovation processes, which is one of the academic gaps this thesis aims to fill. Hence, our research will contribute to the literature by further exploring and uncovering the understanding of these social phenomena embedded in innovation processes.

2.1.1 Innovation Processes

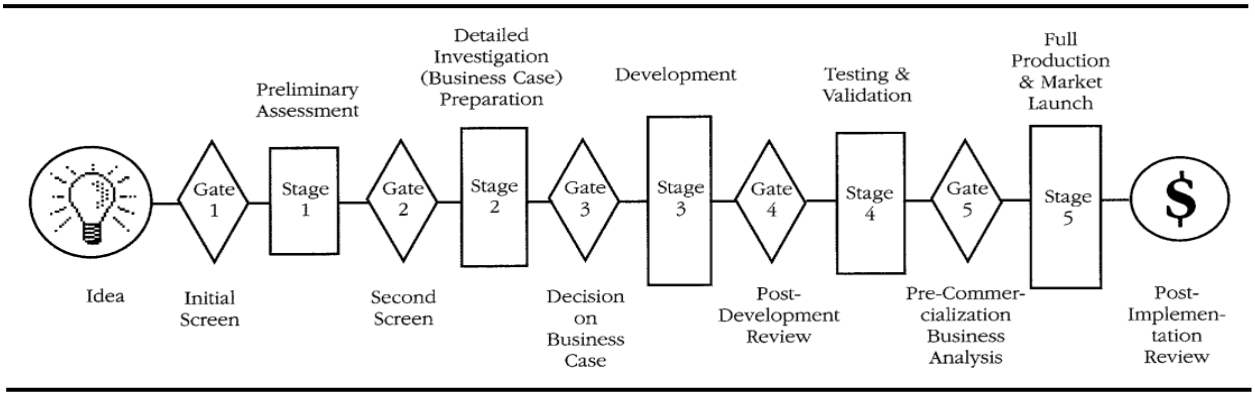
The first phase of innovation is the invention process, which according to earlier scholars, is formed around the push of technology and the pull of demand (Freeman, 1974; Mowery & Rosenberg, 1979). The trigger point for these push and pull mechanisms can be interpreted as a demand-pull linked to the innovation adage that 'necessity is the mother of invention', contextualised as people applying inventions to find solutions to existing problems. On the other hand, one could also state this adage as 'invention is the mother of necessity', meaning that technology push is the invention trigger (Garud et al. 2013; Schilling, 2020). Building upon that, Hargadon (2008) elaborated the concept of invention as a recombination of ideas and physical elements through transformative fields of practice and knowledge, which emerge through the firm's flow of formal and informal networks of ideas. The second phase covers the development of the innovation, which implies, according to Usher (1966), that all new inventions and ideas must be critically reviewed in an iterative process before any value can be extracted. The development phase can be demonstrated through experimenting with prototypes (Thomke, 2003), connecting different relevant company units whose approval is vital for the innovation to be fruitful (Carlile, 2002), or structuring the needed combination of assets to enable the innovation to be manufactured, serviced and economically buoyant (Cooper, 2017). The third and final innovation phase is the implementation. The underlying mechanism here is how to exploit the benefits of an invention that proved vibrant in the development phase (Garud, Nayyar & Shapira, 1997). An external view regarding the implementation of an innovation can be referred to as reaching a threshold or a critical mass of adoption, which allows further adoption of the innovation to be self-sustained (Gruenbaum, 2015). An internal view might suggest innovation implementations that elevate the firm's human skills, internal capabilities, and the organisation's operating routines (Utterback & Abernathy, 1975).

However, these phases of the innovation process are diffuse and most likely non-linear (Garud et al. 2013; Schilling, 2020). With multiple stakeholders and intervening actors and artefacts, innovation processes get tangled up in a complex web of underlying forces that shape the path and influence the outcome. Which subsequently has the potential to challenge any explanation of innovation processes (Baker & Nelson, 2005; Garud & Karnøe, 2012). The actors involved in the process of innovation are also changing as the creation of ideas emerges (Garud & Karnøe, 2003). This adds another dimension of complexity to the innovation processes since these personal dimensions can distort ideas and provoke resistance among individuals and innovation inertia (Glasmeier, 1991). Garud et al. (2013) categorise these four phases of the processes as evolutionary, relational, temporal, and cultural complexities. The evolutionary complexity hinges on multilayered levels of analyses that simultaneously implicate co-evolution (Murmann, 2007). Further, evolutionary complexity relates to the path dependency of processes that are fuelled by positive feedback loops. These loops lock innovation processes into specific directions that have previously shown to be fruitful (Arthur, 1989; Teece, Pisano & Shuen, 1997). Relational complexities arise because innovation processes include a varied nest of social interactions among individuals (Law, 1986). Here, innovation processes are explained through social interactions and relations. Such social interplay is often embedded in ambiguity and challenging to manage and govern (Goodman & Sproull, 2010; Latour, 2005). Temporal complexities refer to the chain of events and the multiple possible ways they can be experienced (Garud & Gehman, 2012). This means that innovation processes are described through several temporal patterns and their inherent experience. The temporal complexities further elaborate on multiple sequences rather than one single timeline of events (Garud et al. 2013). Lastly, the cultural complexities embrace the context in which innovation processes are developing (Van de Ven, 2004). This specific context creates its own practices, behaviours, values, and norms that shape the processes of innovation (Brown & Duguid, 1991). Culture outlines how individuals cope with organising and harnessing the relational and temporal complexities (Garud et al. 2013). Controlling these processes has been seen as a way to invoke discipline into a realm generally regarded as unstructured and chaotic, and the trend is further sprung from companies and industries' relentless chase of improving efficiency and reducing costs (Sethi & Iqbal, 2008). Since most firms operate with limited funds, there is a need to strategize and plan the innovation process in order to control expenses and assure that invested capital is not wasted.

2.1.2 Innovation Strategies

A classic strategy for managing the innovation process is the stage-gate model. Cooper (1990, pp.44) describes the stage-gate model as "both a conceptual and an operational model for moving a new product from idea to launch". Since its inception, Cooper's model has been used to guide innovation processes in a wide range of industries by introducing discipline in order to improve performance, increase efficiency and ultimately reducing the development time of new products (Cooper, 1994; Cooper, Edgett & Kleinschmidt, 2002). The stage-gate model consists of different stages and gates, each implemented to maintain control in a project. Each stage is further divided into a number of activities necessary to complete the stage. Upon the completion of the activities in any given stage, the project reaches a gate. The gate functions as a checkpoint and quality control, and at each gate, there are assigned gatekeepers who are responsible for deciding whether to proceed, kill or hold the project. Generally, the assigned gatekeepers are senior managers with a mandate to make decisions as well as allocate resources necessary to proceed into the next stage in the process to make the process agile and quick (Cooper, 1990). However, because of its rigid structure, the stage-gate process is often regarded as being lengthy and time-consuming (Cooper, 2008). Since the model is built on predicting the development process in order to reduce uncertainty and the number of iterations, it becomes inflexible and ill-equipped to deal with a fast-changing environment as well as leaving much room for interpretation at each gate, making the process dependent on the assignment and discretion of the gatekeepers (Bhatia et al. 2017). An overview of the stage-gate model can be seen in **Figure 1**, displaying a suggestion of different stages and the gates built into the system.

Figure 1. An overview of a stage-gate system (Cooper, 1990, pp.46).



As suggested by Bhatia et al. (2017), most innovation processes do not unfold in orderly steps. Nonetheless, these processes are not random either. Instead, innovation processes are characterised by repeated cycles of divergent and convergent phases, not in line with the benefits of the stage-gate model (Garud et al. 2013. In recent years, more flexible systems have been introduced to handle the uncertain process of innovation.

Design thinking offers a stream of innovation process strategies that breaks free from the perceived linear process of innovating (Brown & Katz, 2011). The design-based approach to innovation entails an organic process with emphasis on design tools, techniques, and attitudes when approaching problem-solving (Nakata, 2020). Design thinking is useful when there is no apparent answer to the problem and builds on the organisation's ability to cope with uncertainty and complexity (Liedtka, 2014). Furthermore, this strategy assumes the centricity of the user to such extent that it involves empathy, experiences, thoughts, feelings, emotions, and alike to better understand and address their needs (Carlgren, Elmquist & Rauth, 2016; Gruber et al. 2015). Moreover, design thinking is meant for the project, if necessary, to fail early and often to produce critical understanding for the next step of moving forward (Brown, 2009). This process is distinguished from the stage-gate model, which is characterised by theorising the problem first and creating a prototype with careful risk management, just to realise that it does not meet the market requirements (Liedtka, 2014). Although design thinking does follow some structure, the focus, however, lies in iterative progression. Usually, the structure is identified as; (I) problem definition; (II) discovery; (III) ideation and; (IV) testing (Leifer & Steinert, 2011). By relying on small repeated trial-and-error, design thinking is an efficient way to find out what works and not, thus breaking mental blocks of pre-defined perceptions by accumulating knowledge (Beverland, Wilner & Micheli, 2015; Nakata, 2020).

2.2 Innovative Organisations

Two of the main characteristics of an innovative organisation are openness to change and successfully managing and absorbing change (Kastratovic, Miletic & Dragic, 2015). To accommodate an increasing change in an organisation's environment, organisations must strive for flexibility and responsiveness to stay innovative (Lee & Edmondson, 2017). In order to achieve organisational flexibility, the organisational structure must be designed to address the so-called

‘flexibility mix’, such as an increased level of decentralisation, use of technology, and culture (Volberda, 1996, pp.362). Incorporating an innovative organisational culture is a critical aspect that needs to be integrated into a flexible organisation to facilitate knowledge creation and knowledge sharing (Adler, 1992; Hedberg, Nystrom & Starbuck, 1976; Torbert, 1974). Through a decentralised, less hierarchical structure, organisations cannot rely solely on formal control as ways of controlling operational tasks of their employees. Instead, the emphasis lies on the community of employees and their connections outside the organisation as being essential in coordinating work through the mechanisms of trust and strong social bonds (Lee & Edmondson, 2017).

Similarly to Lee & Edmonson’s (2017) findings, organisational research has long claimed that organisational culture will support the creation of innovations if it is adaptive, responsive and actively encourages employees to develop new ideas (Burns & Stalker, 1961). Furthermore, Mintzberg (1994) highlighted that cultures characterised as open, informal and more supportive were an essential factor for supporting innovation. Burns & Stalker (1961) classified such flexible organisations incorporating a supportive culture as organic organisations. These organisations were deemed better suited for accommodating these characteristics for successful innovation since an organic approach enhances employees’ motivation since they are more prone to participate in decision making. Embracing an organic organisation and its culture further aids the flow of ideas and information sharing within an organisation and promotes behaviours identified as beneficial for innovation, such as curiosity (Davila, Epstein & Shelton, 2006; Rosenfeld & Servo, 1990). As shown, since innovation relies on organisational flexibility and having an organic culture, the people of the organisation become of the essence. Managing and controlling work in these flexible and organic organisations to promote and facilitate innovation requires discretion.

2.2.1 Organisational Control

Organisational control has historically been based on observable and measurable phenomena and has thus been categorised as two different types of control: behavioural control and output control (Ouchi, 1977). Behavioural control focuses on the process of the work itself and attempts to control employees’ behaviours through regulation and standardisation (Muralidharan & Hamilton III, 1999). To utilise behavioural control to its full potential requires, from a managerial perspective, a high degree of knowledge of the employees’ tasks and routines (Ouchi & Maguire, 1975). On

the other hand, output control measures the output of an employee's work or a group of employees through quantifiable metrics such as sales, growth, or costs (Muralidharan & Hamilton III, 1999). Both behaviour and output control are generally associated with formal mechanisms of control (Jaworski, 1988). For this thesis, a brief explanation of the dimensions of formal control, more specifically output control, is necessary to elucidate since they have an inevitable impact on innovation processes (Pan Fagerlin & Lövstål, 2020). By briefly explaining formal control, it further aids as contrast in distinguishing the realm of informal control.

In the 1980s, the world of management saw the rise of normative control. By focusing on the normative and cultural aspect of the company, managers found a way to control employees through heeding to their internal values and steer employees by boosting employee commitment, morale and organisational loyalty (Barley & Kunda, 1992). Normative control is based on the principles of social psychology and aims to describe control from the premise of humans as social entities who need to feel a sense of belonging. Through this attachment to different group constellations, people unconsciously invoke social pressure to comply with the group or organisational norms and standards (Stewart, Courtright & Barrick, 2012). Normative control has been subject to criticism mainly by interpreting the control as a form of manipulation of employees in attempts to alter or change beliefs that management deems to be more optimal for the organisation (Alvesson & Willmott, 2002). To engage in normative control in such fashion, it is essential that employees internalise the organisation's cultural values, and through this devotion, they "assess their own worth in these terms" (Willmott, 1993, pp.522). If applied successfully, normative control can increase productivity in an organisation or unit by matching the values of the organisation with the internal values of the employees, as suggested by Barley & Kunda (1992).

However, normative control is not only applicable in describing a relationship between managers and employees. By working in a company, employees experience and interpret their surroundings and thus shape the company culture and alter the norms that are to be controlled. By actively engaging with others in manners matching the perceived values of the company's employees, social interactions are thus seen as a central part in upholding and expressing normative control (Stewart et al. 2012). Since normative control is derived from unspoken rules and codes of conduct, we have for the purpose of this study related normative control as being a form of informal control mechanism.

2.3 Informal Control Mechanisms

Earlier scholars have steadily been developing informal control theories, mainly concerning management's use of control (Barley & Kunda, 1992). However, it remains unclear exactly where the distinctive differentiation between formal and informal control lies when including both types of control, which increases the diversity in the conceptualisation of informal control (Pan Fagerlin & Lövstål, 2020). For the purpose of this study, there is a need for theoretical guidance that elucidates a path where informal control mechanisms can be defined. Hence, informal control can be defined as all organisational and individual mechanisms that are unwritten which are used to influence, modify, or preserve the organisation's operative design or business activities (Ayers, Dahlstrom & Skinner, 1997; Tucker, 2019). These unwritten mechanisms may express themselves in spontaneous and unplanned practices, routines and procedures which develop and distribute information collectively through interpersonal relationships within the organisation (Tucker, 2019). Furthermore, informal control mechanisms can be seen as highlighted and implemented by individuals' participation in social interaction (Richtnér & Åhlström, 2010; Tucker, 2019). These social interactions within the organisation are seen as unofficial and not expressly planned (Pan Fagerlin & Lövstål, 2020). Hence, the dividing line in this thesis between which control mechanism is considered to be formal or informal can thus be drawn to which extent they are officially planned and implemented or if the objectives are explicitly created to influence the innovation processes (Pan Fagerlin & Lövstål, 2020; Tucker, 2019).

However, defining abstract phenomena comes with interpretative consequences. As Tucker (2019) points out, when adopting a definition of informal control that relies on the organisations expressed formality concerning formal means of control, a hazard can be derived from the fact that informal control can thus be seen as the residual of categories that formal control mechanisms are not. In turn, this may cripple any findings seen as informal means of control in the processes of innovation when seen as extracted spillovers from what cannot be labelled as formal control mechanisms. On the other hand, to mitigate this possible danger when defining informal control mechanisms, this literature review serves the purpose to align this thesis with the previous scope of how informal control may arise. Although reviewing the existing body of informal control literature does not provide a standard definition, they provide important insights and guidance into the ambiguous nature of informal control.

2.3.1 Culture

Culture as a control mechanism has long been under scrutiny by management scholars (Ouchi, 1979). Cultural control can be organised and classified into three categories tantamount to each other: self-control, social control and clan control. Cultural control as an informal system of control is referred to as clan control. It is based upon the creation of shared values, beliefs, and traditions used to steer the behaviour of employees by empowering them through being members of a group and thus create a sense of belonging (Falkenberg & Herremans, 1995; Ouchi, 1979). These values, beliefs and traditions are incorporated within each employee by interpreting signals and behaviours believed to be accepted by fellow employees and managers (Jackall, 2010).

Social control describes the influence of common beliefs at a company where incentives and rewards are derived from the interactions between employees. These interactions serve to build a reputation at the workplace and thus increase the employees' social network (Dekker, 2004). Social control can be enhanced through actively engaging in socialisation with co-workers, workshops, regular meetings, and similar activities built on social interaction (Choudhury & Sabherwal, 2003; Kirsch, 1997; Stouthuysen, Slabbinck & Roodhooft, 2017). Clan control, similarly, is reliant upon these regular social interactions to be conserved because of it being inherently based on influencing behaviours through the creation of shared norms and values. Individuals abide by and act according to the group's expectations to maintain a sense of belonging (Kirsch, Ko & Haney, 2010). Social control is mainly prevalent in professional organisations, and social control in this context is referred to as professional control (Orlikowski, 1991). Similar to clan control, professional control is maintained and complied with based on the values and norms of other members of the same vocation (Abernethy & Stoelwinder, 1995).

Self-control refers to specific situations where individuals or employees can define their own goals and processes to fulfil a particular task. Throughout this individual process, the person exercises self-monitoring, self-rewarding and self-sanctioning (Kirsch, 1997). Self-control is based on the premise that employees are committed to their work, feel responsible for meeting expectations and holding themselves accountable for their actions and are thus able to achieve intrinsic motivation (Goebel & Weißenberger, 2016). These types of cultural control, while similar, are not synonymous with each other. They may take different shapes and forms and be more or less

aggregated in any company depending on the context and size of the group subject to these controls (Jaworski & Macinnis, 1989). Albeit, it is important to note that it is unlikely that informal control within any company manifests itself exclusively as any of the described forms and that these three described aspects of cultural control are only suggestions on what may be prevalent at ICC (Tucker, 2019).

2.3.2 Expectations and Responsibilities

Within the context of innovation, setting clear responsibilities for each activity has been defined as a core growth-enabling mechanism, according to Day & Shea (2020). In addition, different roles or divisions also have different responsibilities, and thus when innovating, if managers do not align these responsibilities to a common goal, issues might arise (Berhausen & Thrane, 2018). Labitzke et al. (2014) further confirm this when studying service organisations. Their result highlights that when organisations facilitate comprehensible goals, procedures, and responsibilities, which could favour innovation activities by reducing ambiguity and efficiently addressing complex situations. Contrary, an organic organisational structure is considered more innovation-enhancing when operative tasks and responsibilities are free-flowing. In this organic organisational structure, employees are given latitude to their job, hence triggering experimentation and improvisation, which leads to employees taking innovative initiative (Larsen & Bogers, 2014; Schilling, 2020).

However, when innovating, the prominent diversity of knowledge and the variety of operative tasks weaken managers' ability to accurately allocate the necessary responsibilities to specific roles, tasks, or persons. Hence, such behavioural control mechanisms may stifle innovation effectiveness (Guo, Paraskevopoulou & Santamaría Sánchez, 2018). Since responsibilities come with expectations, managers and group members need a sense of when and where to allocate responsibilities. This emphasises the challenge for the complex dynamics of which signals it sends when distributing responsibilities. If all responsibilities are left within the group to be sorted out in complete trust from managers, the freedom can thus accordingly be perceived as a renunciation of responsibilities from the managers. This renunciation consequently may result in a weaker alignment between employees' different roles, leading to misunderstandings when responsibilities and expectations are not predetermined. Alongside, managers are usually expected to take the lead responsibility on complex and challenging issues. In contrast, if managers take all or most of the

responsibilities themselves, it risks being concluded among the project team that managers do not trust them with their expectations. Consequently, team members may shift their focus on doing things right rather than doing the right things. This emphasises the balance between trust and control when utilising mechanisms such as responsibilities and expectations (Jørgensen & Åsgård, 2019). Furthermore, Ouchi (1979) and Tucker (2019) elucidates responsibilities and expectations in the context of social interactions and informal controls. When employees feel responsible for meeting group expectations, they take pride in performing their tasks and accountability (Goebel & Weißenberger, 2017; Tucker, 2019).

2.3.3 Experience

Experience as an informal control mechanism is evident where professionals are employed to perform complex tasks where formal control is an insufficient complement (Zucker, 1991). Because of their experience, they have become familiar with these complex tasks and can execute relevant problem solving independently (Derber & Schwartz, 1991). Who is considered to be an experienced employee is vague and undefined due to its complex composition. However, Perrow (1968) provides some clarification explaining that experienced professionals can cope with conditions of uncertainty where their experience empowers them to apply their expertise adequately. Similarly, Dreyfus (2004) presents a professional employee's gradual learning throughout a career. As experience increases, an employee progresses from the first stage, novice, to the fifth and final stage, an expert. With increasing experience comes a lesser reliance on analytical reasoning and regulations, and emphasis is rather on intuition. Nonetheless, as Raelin (1989) points out, there is a hazard where a possible course of collision lies within the organisation between experienced employees and established formal control. This is evident when core operational tasks become contingent on experienced employees as they exert their own autonomy and thus disregard official protocols or formalised tasks. This autonomy performed by experienced employees further enhances their informal control since they possess the ability to steer both the processes and the purpose of their tasks (Barley & Tolbert, 1991; Derber & Schwartz, 1991).

Consequently, this may lead to experienced employees exploiting their informal control within innovation processes to establish dominance and authority to pursue their own goals and objectives rather than those of the team or the organisation (Holmstrom, 1989; Scase, 2016). Hence,

experienced employees may negatively influence the effect of managers formal control and managerial activities, such as goals and formal principles (Abernathy & Stoelwinder, 1995). However, experience as informal control can be beneficial when formal means of control are insufficient to cope with the uncertain nature of complex business environments (Merchant, 1989; Ouchi, 1979). Furthermore, for these synergies of complementary control between managers' formal agenda and experienced employees' informal autonomy, social acceptance is an important link for this congruence. Additionally, by setting a social strategy for accepted autonomy and behaviour among employees, experienced professionals can act independently and still be aligned with the objectives and purposes of the organisation (Ouchi, 1979).

However, if managers actively try to impose formal control to combat the power imbalance between experienced and inexperienced employees by obligated standardised procedures, proved to provoke a new effort from experienced employees to evade these formal means. Thus, once again applying their autonomy, which in turn creates loops of counteracts until operational tasks reach a locked state of an inflexible equilibrium (Young & Saltman, 1998). These actions' long-term effects will negatively influence both professional integrity and organisational culture (Copur, 1990; Escrig-Tena et al. 2021), as well as adding costly bureaucratic rules (Holmstrom, 1989).

2.3.4 Support

Formal structures have been argued in the previous section to either breed innovative success through order and channelling competence or stifle creativity leading to a decrease in informal experiments and improvisation and thus cripple innovation processes. However, none of these theories are relevant without incorporating the underlying forces of having support for one's ideas (Garud et al. 2013). Schilling (2020) further extends the discussion explaining that individuals working with innovation depend on an environment that enhances their creative potential through iterative support for creative ideas. Support in innovation processes goes beyond the hard support, such as physical resources. Rather, it is a merge of hard and soft support, where soft support is the environment where employees can get valuable, actionable, and honest feedback by fostering knowledge sharing and endorse learning that enables employees to improve (Escrig-Tena et al. 2021; Schilling, 2020). It is also evident for organisations who create this supportive innovation

environment that they are more prone to accelerate innovation processes through this narrative (Penrose, 1959; Schoemaker, Heaton & Teece, 2018). However, a common fallacy is that competence is associated with a lesser need for support, where organisations hire experts with the assumption that they will be self-supportive. Hence, organisations need to seek to construct a supportive environmental narrative and design their operational tasks around it, and not trusting innovators or experts to be self-supportive (Day & Shea, 2020). Furthermore, Brown & Eisenhardt (1995) emphasises the importance of support in innovation processes where continuous collaboration and communication within project team members facilitates team members' understanding of each other and the coordination of operational tasks. In addition, senior management support is a balance between allowing ambiguity and exercising control in their support for innovation. Therefore, senior managers should engage in using support as informal control to gauge this ambiguity to such an extent that creative problem solving can thrive whilst aligning innovations with the overall company or division goals.

However, Escrig-Tena et al. (2021) suggests that in the processes of innovation, managers can effectively use support mechanisms as a vehicle of informal control to promote creativity and stimulate innovations. In their study, the authors polarised control with the role of informal support at one end and formalisation of the innovation process at the other as two different types of control mechanisms. Their findings illustrate that the gravity of support as informal control is more potent than formal means of control when it comes to stimulating innovation processes. Using support as an informal control mechanism is thus intertwined with the organisational culture. Support as a branch within the organisational culture stems from employees' social channels and interpersonal relationships, which breeds creativeness and informal control mechanisms entailing different levels of systemic governance (Escrig-Tena et al. 2021). Nevertheless, as informal control, support per se should be perceived as helpful and meaningful and should thus be developed based on interpersonal dialogues and active participation among employees (Jørgensen & Åsgård, 2019). However, support is mutually overlapping with other dimensions of both formal and informal control mechanisms since isolating one phenomenon is not comprehensible for the entire chain of events within the context of innovation processes.

2.3.5 Theoretical Summary of Informal Control

Table 1 presents a suggested framework for the understanding of informal control mechanisms in an innovation context. The presented framework depicts a seemingly diverse set of informal control mechanisms. However, the review unveiled that many attributes of informal control overlap in several aspects, which will be further elaborated upon in **Chapter 5** when we discuss our findings in relation to previous literature. Hence, this conceptualisation of different informal control mechanisms is believed to sufficiently incorporate the prominent findings of previous research that subsequently will be used for the purpose of this thesis.

Table 1. Summary of informal control mechanisms.

Informal control mechanism	Manifestations in previous research
Clan control	Creation of shared values, beliefs and traditions (Ouchi, 1979). Interpretation of signals and accepted behaviour (Jackall, 2010).
Social control	Interactions and socialization with co-workers. (Choudhury & Sabherwal, 2003; Slabbinck & Roodhooft, 2017). Networking (Dekker, 2004). Maintaining a sense of belonging (Kirsch, Ko & Haney, 2010).
Professional control	Influence by other members of the same profession (Abernethy & Stoelwinder, 1995; Orlikowski, 1991).
Self-control	Commitment to your work leads to self-monitoring, self-rewarding and self-sanctioning (Goebel & Weißenberger, 2016; Kirsch, 1997).
Experience	Autonomy in times of uncertainty (Merchant, 1989, Ouchi 1979).
Support	Interpersonal dialogue and active participation (Jørgensen & Åsgård, 2019). Result of social channels and interpersonal relationships (Escrig-Tena, Segarra-Ciprés & García-Juan, 2021).

3. Methodology

The methodology chapter will introduce our chosen research design. First, we motivate the used methods and research design by reflecting on possible impacts related to our purpose derived from the chosen methods. This part is followed by an explanation of our data collection process and motivations for the chosen case company and how it is suitable for our thesis and possible implications. Hereafter, we comment on our ethical considerations that have encompassed us in this research. Moving forward, we will discuss the process that covers the analysis of our collected data and, in detail, explain our data analysis process. Lastly, this chapter will reflect upon the reliability and validity of our research linked to our chosen methods to ensure the quality of our findings.

3.1 Research Approach and Design

This thesis has aimed to explore and understand the influence of informal control mechanisms in product innovation processes. As such, the following research questions were stated in the introduction to guide our research:

> *How are product innovation processes influenced by informal control mechanisms?*
>
> *Which informal control mechanisms can be identified within the context of product innovation?*

To answer these research questions, a qualitative single-case study was conducted. By conducting the research qualitatively, we gained an understanding of specific problems or situations with more information within the context of our case company, ICC (Bell, Bryman & Harley, 2019). The epistemological position of the study is based on the interpretation of words and sentences through a constructionist worldview (Bell et al. 2019; Creswell & Creswell, 2018). This worldview was selected due to its inherent suitability to address and explore the social phenomena taking place at ICC, such as interactions between different levels of employees, in order to explore and theorise how such interactions can influence the innovation process. A qualitative approach was further adequate since the understanding of the phenomenons was anchored to the interviewees perceived

social and historical context in which they work and live, which cannot be quantified through the numbers and statistics of a quantitative method (Rennstam & Wästerfors, 2018).

Since we explored phenomenons qualitatively, an abductive research approach was considered appropriate since it addresses some weaknesses of both inductive and deductive methodologies. The weaknesses in question being the abundance of data required to enable theory-building inductively and the lack of clarity in how to select appropriate theories to be tested deductively. Furthermore, abduction offers a pragmatic and flexible approach when researching and exploring complex social phenomena, such as innovation processes and informal control mechanisms (Bell et al. 2019). Hence, an abductive approach equipped us with the resources to inductively draw conclusions from our empirical data, as well as explain the identified phenomena through existing theory deductively. Furthermore, the abductive approach is advantageous for this study by enabling progress to be performed iteratively between theory and analysis. Moreover, the aim was to gauge inherent patterns rather than prescribe distorted ideas on the emerging data (Bell et al. 2019). This methodological approach is further acknowledged by Blumer (1954), who argues against the use of definitive concepts in qualitative and social research for that reason. However, mapping a theoretical landscape is important and beneficial in the way that it provides an overall understanding of general boundaries and a sense of direction in the approach of our empirical data (Blumer, 1954). In conclusion, this approach utilised the existing body of literature while at the same time exploited an unbiased product when we analysed the empirical data as intended by the method's inception (Dubois & Gadde, 2002).

The single-case study's strength lies in its inherent ability to provide an in-depth analysis of the unique aspects of one single organisation compared to multiple case studies or a quantitative approach (Bell et al. 2019; Creswell & Creswell, 2018). However, since our findings are based on a specific context and highlighting these aspects in a single environment, we are limited in our expansion of existing theoretical concepts in order to provide meaning and understanding on a conceptual level (Scapens, 1990). Our findings will thereby mainly be suited to contexts similar to ICC and might be ill-equipped with providing general conclusions for all aspects of innovation processes and the influence of informal control mechanisms. However, the constructivist worldview emphasises the usefulness of a single-case study since the focus is on the experiences of individual employees (Bell et al. 2019).

3.2 Collection of Data

With the purpose to explore and understand the influence of informal control mechanisms in product innovation processes, a qualitative case study was performed in collaboration with ICC. All data we used for this thesis was acquired from interviewed employees at ICC, i.e. only primary data was used. The data collection was acquired through recorded online semi-structured video interviews. Conducting the interviews online was a result of the ongoing COVID-19 pandemic. The video interviews may have resulted in some difficulties in establishing and maintaining a personal relationship with the interviewees, which may have limited the number of details surfaced, as suggested by Curasi (2001). However, we are confident that the acquired data fulfil the purpose of this study and answers our research questions. Although, we cannot exclude that further data collections methods, such as observations, would have enriched our understanding regarding our findings since informal controls are abstract phenomenons and thus difficult for interviewees to reflect on.

Our semi-structured interviews were based on an interview guide (provided in **Appendix A)** which served to ensure that relevant topics were discussed to collect the needed data. The interview guide was developed with the flexibility to be suitable for any position working with innovation processes at ICC and thus functioned as the same guiding foundation for all interviews. Since the topics covered remained the same for all interviewees, independent from their role or title, it further upholds the use of our multidisciplinary interview guide. This structure emphasised open-ended questions in order to create a leeway in how the interviewees interpreted the topics and subsequently formulated their answers. Furthermore, this structure provided adaptability and possibilities to ask follow up questions to probe for details (Bell et al. 2019). However, the disadvantage of semi-structured interviews was inconsistencies in the collected data since each individual interview was steered in different directions. This inconsistency could have been avoided with structured interviews and closed questions (Collis & Hussey, 2013). However, the flexibility provided by semi-structured interviews we believe outweighed a closed-question approach for the purpose of this study since we could actively explore relevant topics (Bell et al. 2019).

The interviewees were chosen after preparatory meetings with the Chief Executive Officer (CEO) and the Project Operations Manager (PMO). We requested and received a list of suitable and

available interviewees totalling eight people, which is in the upper range of what Creswell & Creswell (2018) recommends for a qualitative study in the understanding of phenomenons. Hence, there may be a sampling bias with the list provided since we did not choose the interviewees ourselves (Creswell & Creswell, 2018). However, the list of potential interviewees was composed in accordance with our criteria of including various positions, age, gender, experience, and actively working with innovation processes. Furthermore, this supported a wide array of possible insights into their innovation processes related to our research purpose and question in order to reach theoretical saturation (Bell et al. 2019). The respondents' role and connection to ICC's innovation processes have been summarised in **Table 2**. The interviewees were composed of three women and five men, with a professional experience range between 1 and 35 years, spread out on six different roles[3]. The interview structure leveraged the dynamics of having one leading interviewer and one passive interviewer. The passive interviewer's task was to observe the overall progression of the interview, prepared to suitably intervene whenever a topic needed to be further probed for valuable insights or if the interview was in need of directional change. Although, the disadvantage of this system may have been that the interviewee felt intimidated by two interviewers (Bechhofer, Elliott, & McCrone, 1984). However, this was not something we perceived was experienced by our interviewees.

Table 2. Summary of interview data.

Description of role	Role	Interview length	Transcribed pages
Managers are responsible for leading innovation projects and operational tasks.	Manager 1	58 min	14
	Manager 2	51 min	10
	Manager 3	53 min	9
	Manager 4	57 min	13
Engineers are responsible for different technical development regarding any given project. The technical orientation changes depending on the role in each project.	Engineer 1	56 min	8
	Engineer 2	58 min	11
	Engineer 3	55 min	16
	Engineer 4	61 min	12
	Total: 8 interviews	7h 29 min	93 pages

[3] All six roles have been labelled as either 'manager' or 'engineer' for anonymity reasons.

After we had conducted six interviews, the insights and details derived from the interviews exposed patterns of the theoretical saturation needed for our analysis. However, we decided to complete all eight scheduled interviews since they exposed an opportunity to ask further questions connected to perceived interesting themes to gain richer data. Since all the required empirical evidence was collected in eight interviews to address our research question adequately, we recognised that conducting more interviews would not have led to more relevant themes arising. However, although we are confident about the theoretical saturation in our collected data, we cannot reject the circumstances of a greater number of interviews which might have yielded additional insights. Lastly, this data collection method has been acknowledged in earlier scholars exploring phenomena regarding innovation processes and informal control mechanisms. Among them, we have identified the study performed by Pan Fagerlin & Lövstål (2020) using the same methodology of semi-structured interviews to collect data in a single-case study concerning product innovations and control mechanisms.

3.2.1 Choice of Case Company

While the previous section motivated and explained the choice of interviewees, this section serves the purpose of discussing and clarifying the choice of ICC as our case study company. As Pan Fagerlin & Lövstål (2020) calls out, the existing academic literature is in need of voluminous research beyond mature industries and large companies[4] that are not experiencing revolutionary changes. By choosing ICC, which is classified as a medium-sized company according to the European Commission's (2003) definition, we thus study a company that is not inhibited by its large firm size (Schilling, 2020). Moreover, ICC is neither too small to risk an insufficient amount of innovation processes in place for us to study or suffers from a shortage of employees needed for our theoretical saturation in the data collection. However, since ICC is earning their revenue by offering innovation consultancy, there is a possible bias within their innovation processes derived from the fact that ICC is innovating on the basis of an external order inflow. Despite this possible bias, we are confident that the choice of ICC as a case company is motivated since previous research call out for an understanding of informal control mechanisms within the context

[4] Large companies are defined as companies employing more than 250 people and with an annual turnover of more than 50 million Euros (European Commission, 2003).

of innovation, regardless of it being a consultancy (Garud et al. 2013; Henri & Wouters, 2019; Longo & Giaccone, 2017; Pan Fagerlin & Lövstål, 2020). By having ICC as a case company, we were provided with detailed insights in various stages and contexts regarding product innovation processes that would not have been possible in a single-case study company acting exclusively within a defined line of products or industry.

3.2.2 Ethical Research Considerations

Throughout this thesis, we have been engaging in ethical practices to anticipate any ethical issues that might be of concern prior to the study. Since this research builds its findings upon collecting data from people, clarifying these ethical issues is a necessary step for us as researchers to protect our participants, promote the integrity of the study, and ensure there are no delinquencies (Israel & Hay, 2006). Already before contacting ICC with our research proposal, we framed the ethical considerations to ensure integrity for them as a company, as well as for their employees. Here we stated who we are, what our purpose was, identified their benefits for participating, identified their level of involvement, guaranteed confidentiality of participants, assurance to withdraw at any time, and our contact information for further details and questions. As suggested by Sarantakos (2005), obtaining these permissions are ethical requirements before starting to collect data. This resulted in an open and transparent conversation with ICC prior to collecting any data to prevent any conflict of interest.

Prior to any interviews, we informed all participants about the purpose of the study, our research questions, the interview procedure, how much of their time it would require, and who will have access to their data. This enhanced transparency, trust and demoted any deception since the participants understood the purpose of the study (Bell et al. 2019; Sarantakos, 2005). Furthermore, we notified that their participation is voluntary, and all personal information and statements will be anonymised with pseudonyms and impossible to link to any individual. All statements from the interviewees have been verified by the individual to ensure that there is no content that can be perceived in any way as harmful or offensive before being published. To cope with any possible stress associated with participating in this study, all interviewees chose their preference of day, time, and location, which is a benefit derived from performing online interviews. Furthermore, this recognises the participants' ordinary flow of activities and minimised our disruption (Creswell & Creswell, 2018). Before starting each interview, we repeated all of the beforehand given

information to guarantee the interviewees full consent and to give them another chance to deselect their participation. Additionally, to not make the participants feel uncomfortable at any time or invade their privacy, we also informed them that they at any time could cancel the interview, request to stop the recording or skip any questions without any explanation required. However, no participants exerted any requirements of such character. After finishing each of the interviews, we further informed the participants about the data processing, verification of statements, deletion of recordings, and how to contact us for further questions.

3.3 Data Analysis

In the sensemaking process of the collected data, Creswell & Creswell (2018) and Bell et al. (2019) emphasises the importance of a proper data analysis as it enhances the understating of the collected data. To properly analyse the empirical data amassed from the interviews, we first transcribed the recorded interviews in order to have reliable data written down in text to analyse it further and use it for citations. We analysed our data as suggested by Rennstam & Wästerfors (2018) through three different phases, (I) sorting, (II) reducing and, (III) argumenting. Analysing the data in this way provided us with a clear overview to consistently elaborate around areas that emerged to be most relevant. Furthermore, thoroughly analysing the data aided us in becoming familiar with the material. Additionally, this laid the foundation whereupon our themes surfaced, which potentially could support in answering our research questions. This process was used in a repetitive manner, and we iteratively moved between the three phases before concluding our data analysis. Hence, we discovered new findings on the basis of continuously re-reading the transcribed data throughout all phases. The data analysis process was essential since qualitative research is based on an abundance of data. Being methodological and sequential in the analysis process is thereby considered to be a well-proven approach when dealing with qualitative data from interviews in socially scientific studies (Rennstam & Wästerfors, 2018). The final themes that were derived from the data analysis were: culture, expectations, responsibility, experience, and support, which will be further presented in **Chapter 4**.

3.3.1 Sorting

The sorting process is, according to Rennstam & Wästerfors (2018), the first step to organise your qualitative data that usually is characterised by a certain amount of disorder. Here, we induced the

deductive part of our abductive research design since the sorting phase was guided by pre-defined theoretical boundaries of what is innovation processes and informal control. We began our data analysis by getting familiar with our transcribed material through reading it without the aid of our interview guide to absorb findings without the bias of our interview guide. This part of the process was characterised by an openness to look for different viewpoints that could potentially answer our research question. Hence, the sorting process progressed iteratively, where we re-read the transcribed material to reconsider all data. Particularly, we observed and discussed issues that were recurrent, surprising, indicated tensions, or paradoxes, as suggested by Rennstam & Wästerfors (2018). Furthermore, the process was also a first start to where the empirical data was organised into smaller and more manageable components for further steps in the analysis process. By leveraging on our semi-structured interviews, we could at first sight note frequently visited content among our interviewees that emerged from our data, which gave reasons to analyse it further. In this stage of the sorting process, categories started to emerge. Working iteratively between the raw data and the overlapping categories revealed more information and linkages between the identified categories. This process continued until no new categories were salient, surprising or deviating (Rennstam & Wästerfors, 2018). When reaching a set of categories perceived as illuminating all interesting dimensions of the empirical material, we started the process of coding and labelling our identified categories. In addition, the coding and labelling of our categories aimed to summarise and portray the sorted data within each category, which subsequently could be seen as potential themes perceived suitable to answer our research question.

The risks, as identified by Rennstam & Wästerfors (2018) in the sorting phase, lies in the fact that qualitative studies produce a large amount of data with a bias in our interpretation of what data gets sorted out. Moreover, another challenge is to successfully create a sorting process free from preconceived stereotypes or wishful thinking. The remedy was to be sceptical in all of our sorting decisions, which was ensured by leveraging that we were two authors of this thesis. Thus we challenged each other's thoughts and interpretations throughout the whole data analysis process. However, qualitative data will never be sorted entirely free from bias or ambiguous interpretations (Brante, 2009, referenced in Rennstam & Wästerfors, 2018).

3.3.2 Reducing

When our data was extracted into labelled categories, we began the second phase of Rennstam & Wästerfors' (2018) data analytical process. This process consisted of reducing the sorted categories into fewer and more prominent categories. This phase was necessary since having too many categories would have given us too many possible avenues for our future analysis. Hence, our thesis could risk overlooking its scope and purpose. By reducing our identified categories into more manageable quantities, we gave rise to the possibilities of being accurate and specified later on in our findings. However, the reducing phase was a very considerate process since reducing too much might risk fragmenting our data (Rennstam & Wästerfors, 2018). To cope with this risk, we focused on reducing into a narrative throughout prominent categories where our interviewees told the story, as suggested by (Riessman 2008), instead of reducing and trying to put it back together again to find a narrative (Atkinson, 1992). In addition, to complete the reduction phase, we kept a close dialogue on which categories were shown to be the most distinguished, both according to the volume within the category and to the perceived empirical richness. This created a more interesting set of data where notable categories were taking the lead, which was supported by smaller sub-categories.

The second step in this phase was to carry out an illustrative reduction by identifying excerpts that distinctively highlighted a key process or characteristic within the identified categories. Doing this reduced the categories further to illustrate phenomenons within the category in a more perspicuous way. What was interpreted as a distinctive process or characteristic within a category was then marked with the colour green, as more ambiguous ones were marked with red. What was neither distinctive nor ambiguous was marked with orange. By labelling quotes by colour within a category instead of erasing them, further provided us with the possibility to re-interpret them in a later stage of the data analysis process, although still pointing out core features for each category (Rennstam & Wästerfors, 2018). Categories that were removed or iterated through this process can be found in **Appendix B**.

3.3.3 Arguing

The last phase of our data analysis process was the argumentation for our empirical findings since only creating labelled categories by sorting and reducing does not reveal anything beyond obvious

statements (Rennstam & Wästerfors, 2018). By leveraging on our abductive research approach, we argued for our findings by inductively searching to add nuances and perspectives to existing concepts, although also opposing them and creating new equivalents. This phase was also where we contributed to the existing body of literature by theorising particular phenomena without them being subordinate to the existing theoretical field. Moreover, the arguing phase goes beyond a mere presentation of the data. Hence, it was characterised by iteratively arguing in the realm of our empirical data at hand, creating an understanding in a variegated way. This elucidated the differences in our findings compared to existing concepts, the potential usefulness, and theoretical and practical contributions. However, it is vital that the theorisation is being related and relevant to current understandings and explanations within the scope of the study (Rennstam & Wästersfors, 2018).

Furthermore, the hazards when argumenting and theorising our empirical findings is risking an exaggerated contribution and adopting a too opinionated stance. On the contrary, there is a potential risk of being too modest and belittling our findings. Thus, we balanced between staying in the academic corridor where our empirical conversation took place as we attempted to humbly, although without sacrificing our academic integrity, argue for our findings (Rennstam & Wästerfors, 2018). This was mainly done by arguing for our findings with support from our data analysis since empirical facts cannot be understood in themselves without any concepts. Constructing these concepts was realised through analysing our excerpts, metaphors and analogies to form a more general theoretical understanding of a phenomenon (Fangen, 2005, referenced in Rennstam & Wästerfors, 2018). Thus, creating a new way of illuminating phenomena beyond the existing knowledge. Arguing and theorising our findings further permitted us to comprehensively target practical implications derived from our analysis, which potentially could be relevant to similar contexts (Rennstam & Wästerfors, 2018).

3.4 Validity and Reliability

Before conducting the interviews, we studied Kvale's (1996) list of criteria for conducting a successful interview. Kvale lists several criteria, with an emphasis on knowledgeability, structure, and clarity. In order to strengthen our interview process and address these criteria, we conducted a pilot interview with a peer knowledgeable in the theoretical dimensions of innovation and its

processes. By testing our semi-structured interview guide before interviewing employees of ICC, we were able to increase our knowledge and familiarity with the interview guide. Hence, we were able to test if the questions were relevant and easy to understand for an interviewee. The pilot interview gave insights for clarifying and deleting some questions to ensure a smooth and relevant interview within the suggested time frame. These were important alterations to ensure that we stayed on topic and respected our interviewees time and schedule.

To establish validity and reliability of our qualitative study, we adopted Lincoln & Guba's (1985) two primary criteria of trustworthiness and authenticity, which can be seen as synonyms to validity and reliability when conducting qualitative research (Bell et al. 2019). The trustworthiness aspect consists of four criteria: transferability, dependability, credibility, and confirmability. Since our study was conducted through a single-case study, we can neither confirm nor deny the transferability of our suggested theory for other companies or industries to any greater extent. However, we have provided the reader with a 'thick description' of how we conducted our research and presented the context and perceived culture of ICC. To further increase the transferability, we incorporated a transparent approach to our research to allow for potential replications, as suggested by Geertz (1973). The aspect of dependability was taken into consideration through the peer-reviews orchestrated during the mid seminar and through a continuous dialogue with our thesis supervisor. These procedures were set up in order to establish an external audit designed to challenge our presented findings. The audit was, however, limited to the findings of the results section available during the mid-seminar. By not giving the auditors access to the entire dataset, they were limited in validating and scrutinising the data in its entirety which may have impacted the dependability. Credibility was attended to through respondent validation from all eight interviewees through a sharing of the transcriptions and highlighting the data we intended to use for the empirical results and analysis section of the thesis. As such, the criteria of credibility can be deemed adequately addressed. Confirmability was considered by us being aware of the fact that complete objectivity in a constructivist study is impossible to obtain. We maintained awareness by continuously taking moments to reflect and discuss how our preconceptions were shaping the study. By deliberately engaging in research and theories with different views on innovation processes and progressing abductively, we actively considered measures in our strive for objectivity and transparency (Lincoln & Guba, 1985). These measures revolved mainly around the presentation of our empirical findings and our academic contribution. By taking these criteria into

account throughout the writing process, we are confident that the validity and reliability are sufficient despite the study's qualitative nature. Reliability, however, is likely to have been impacted by our method for data collection. The semi-structured interviews, being steered towards interesting topics, also meant that we disregarded other potential topics (Bell et al. 2019). While pursuing subjectively interesting themes, our preconceptions are reasonably presumed to have interfered with our objectivity.

4. Empirical Results and Analysis

This chapter presents the empirical findings for this thesis which was collected from eight interviews with employees at ICC. The presented results have been analysed using Rennstam & Wästerfors (2018) framework, which was introduced in **Chapter 3**. The results are the sum of perceived influential themes suggested to support informal control at ICC. These themes were derived from our interpretations during the data analysis process, where the narrative is built around the worldview of our interviewees. The chapter first introduces the identified innovation process at ICC, which is then explained through ICC's organisational and innovational culture. This explains how collective values, norms and beliefs are perceived to shape and influence innovation processes at ICC through subtle informal control mechanisms. Secondly, the proposed impact of informal control expressed through expectations, responsibilities, and experience will be explained and how they influence innovation processes at ICC. Thirdly, we will present how support seems to act as an informal medium of control within ICC. Lastly, a summary of the empirical findings will be presented to provide an overview of the analysis.

4.1 Innovation Process Phases at ICC

The innovation process at ICC is, in theory, a seemingly straightforward process. The general model is deliberately kept on a generic level in order for it to accommodate different industries and companies hiring ICC for their innovation and product development needs. The process consists of three phases; (I) analysing product needs; (II) conceptualisation, and; (III) implementation.

4.1.1 Phase I: Analysing Product Needs

Analysing the needs for the product is the first phase and starts when a customer approaches ICC for innovation consulting regarding a new product or existing product development. The first phase is characterised by meetings with the external customer in order to discover what needs the product should serve. This is done through interviews and observations of potential end-users with a focus on researching and exploring all possibilities. The seemingly general understanding within the company regarding ICC's approach to innovation is that this first phase is crucial to maintain a

smooth process throughout the following phases. The smoother the process, the better prerequisites for successfully innovating a product. As a result, the external customer will be more satisfied. Manager 4 highlights the importance and the difficulties of this first phase of innovating.

> "It's important to listen, sit with the customer and try to ask the good questions in order to answer what they really want. There is no simple method for that. It is very much dependent on the people [involved] and [their] interpretations." – Manager 4

Engineer 1 further highlights the importance of engaging with the customer and getting them onboard in the process, especially if they bring their own idea to the discussion.

> "A good innovation process is mainly about figuring out the needs of the customer. [...] The customer needs to understand that if they have an idea, then we must scratch and tear a bit into this idea in order to be able to ask the difficult questions. Are the consequences considered? Are there any standards we need to comply with? [...] It is very hard to put up these kinds of frames for where my creativity is supposed to take place." – Engineer 1

The 'frame' that Engineer 1 mentions seem to serve as a formal control of the end product, and as such, informal control of the process which precedes the product. Even though there is freedom in the creative process, there are still judgement calls that have to be made whether what is being done can be deemed relevant for creating a product which the customer accepts. Manager 2 further mentions the benefits of being front-heavy in the innovation process is that they are able to "maintain open to a wide range of technical solutions before diving into a specific dimension". Since ICC is a consultancy company and therefore are dependent on a steady stream of customers to maintain their business model, the value of customer satisfaction is regarded throughout all processes within the company. Maintaining this width as long as possible is suggested to minimise the risk of making wrong decisions which could become costly and negatively impact customer satisfaction.

4.1.2 Phase II: Conceptualising a Solution

The second phase addresses the conceptualisation, which is explained as being centred around producing ideas and concepts suitable for addressing the needs identified in the first phase.

Typically, this is done through different ideation sessions, usually decided under the discretion of a project manager as depicted by Manager 2.

> "The most common way is a traditional brainstorming session. Alternatively, we do it through a regular coffee break or use more formal methods; there are a bunch of idea generation methods. Usually, you choose the one that the group enjoys, what the situation allows and what is deemed most suitable." – Manager 2

The conceptualisation process can sometimes be frustrating if it becomes rigid and if employees are expected to participate actively and contribute during a brainstorming session. Engineer 2 describes this process as being slightly stressful and demanding.

> "I think it's best if I can ideate when I'm allowed to sit alone and tweak, tinker and think. This whole idea of brainstorming is not where I perform best since I think it invokes a lot of pressure. [...] It's a bit stressful. What I feel works best is to sit alone in my chamber and look at one thing and think." – Engineer 2

Regardless of which method being chosen, there seems to be a common understanding of innovation and ideas being a constantly living and evolving entity. Hence, ideas can come from anywhere and anytime. Thus, by staying generic in the overall process, there is a belief that the flexibility needed to engage in ideas whenever they may come to fruition is enabled. This phenomenon is illustrated by Manager 2.

> "[...] and ideas come when they come, you don't really decide yourself, although it could happen when I'm drinking coffee or whatever. If we, for instance, are in the phase of analysing the needs and I get an idea, then I need to take care of that." – Manager 2

Regardless of when, how or where ideas are generated, the final idea is later decided upon as a group. This is mainly done to allow each team member to provide their inputs and to ensure that all available data is provided in order to make well-informed decisions. Engineer 2 explains that having an open process for decision making is essential in order to feel included and part of the team, which in turn makes working with the innovation more fun, "I believe that [management] wants us to have some fun and allow us to take part in the decision making". Manager 3 agrees with this viewpoint and extends this belief through ICC being a Swedish company that inclusion

and a sense of democracy are both equally crucial for a successful project. When asked if the decision is made collectively, "I guess it is. We are in Sweden!". Manager 3 further elaborates on the decision process, highlighting a low focus on who actually produces or introduces the idea. A seemingly important aspect in the conceptualisation process is the solution being presented. Manager 3 suggests that there are no underlying mechanisms impacting this process when stating that, "personally, I'm ambivalent [about who comes up with a solution]. The approach is subordinate to the result". Manager 2 further mentions this process as answering questions connected to the functions derived from the product needs analysis and how they influence the final decision.

> "[...] then they have to be compared with these functions. How well do we believe that this idea will fulfil these functions? That process is made through discussion and working together, both internal [in the project team] but also together with the customer." – Manager 2

Manager 1 mentions that even though some decisions are ultimately made by the customer, it is still the team that is responsible for the innovation. Hence, each individual team member is allowed to shape the outcome of the innovation as long as they stay within the 'frame' as mentioned by Engineer 1. The team members have the freedom to present ideas that they deem adequate.

> "By making the selection of what's important in analysing the needs, it also becomes clear when we attempt to solve them in the right manner. [...] It is the customer [who makes the final decision], but we need to have a reference group who provides inputs there." – Manager 1

When a concept is decided upon, the process progresses into the third and last phase, implementation.

4.1.3 Phase III: Implementing the Concept

The implementation phase is usually reliant on the final inputs from the customer. Manager 1 mentions that the better you have executed the previous phases and the more thorough you have been in your selection of ideas compared to the needs identified in the first phase, the easier it will be to pitch the final concept to the customer. Manager 3 mentions that the implementation is

dependent on how well they are able to package the project from the beginning by being able to "drill in the demands of the customer", implying that there is an understanding in all regards of the innovation process that the customer has the final say in what and how something is getting produced. The innovation process in its entirety is illustrated in this context by Manager 2:

> "All tasks and operations we perform at ICC are there for a reason. All activities. It means that somewhere we have a paying customer. And if we have a paying customer, we also have a project" – Manager 2

There also seems to be an understanding at ICC that, while the implementation phase is necessary to complete a project, it is not a source of innovation. Engineer 1 summarises the final phase of the innovation process:

> "Implementation is not really anything innovative; rather, it's a bunch of old and already acquired knowledge put into practice. There is no room for innovation there. Instead, innovation comes [in the phases] before. [..] Which parameters that need to be adjusted is part of the implementation later." – Engineer 1

Since we identified a supposedly strict relationship between a customer's decision for the implementation and the person responsible for the business, we were only able to identify weak nuances of informal control impacting these decisions. Hence, we could not identify any valuable indications or interpretations aiding the purpose of this thesis. Due to non-disclosure and anonymity reasons, customer perspectives of the implementation were inaccessible. However, this process, while being seemingly straightforward in theory, is being influenced in many ways throughout its progression. A theme being attributed to the success of innovations at ICC appears to be their organisational culture.

4.2 Innovations Shaped by Organisational Culture

The organisational culture indicates to be of importance in shaping the environment surrounding innovation processes at ICC. There is an alleged common understanding within ICC that innovation works best when there is creative freedom built into the system. Since ICC is servicing a wide array of industries and different technologies, it is further important for them to maintain a

professional width among their employees. Because of this width, project managers have a hard time maintaining an adequate level of expertise and detail orientation in different areas of innovation. To mitigate the risk of spreading managers' expertise too thin over projects, ICC emphasises the importance and expertise of each individual employee in order to allow for a creative process to take place, as Manager 1 depicts.

> "It is necessary to hire competent people who are able to be free and take responsibility between the different phases [...] it's seldom a good idea to micromanage the creative process." – Manager 1

Manager 3 elaborates on the creative process and its role in the overall success of ICC, "definitely, creativity is very important. People who enjoy their work and find the project fun [...] makes for a much better result". Engineer 1 agrees with this depiction and presents their view of the culture at ICC.

> "At ICC, we are a happy bunch of people. There's a very positive atmosphere within the company. With that [positive] mindset, you solve 50 per cent of all problems, as I would like to say. If you see everything with a twinkle in the eye, mixed with seriousness, I believe that you will go far." – Engineer 1

The positivity presented by Engineer 1 is insinuated to be derived from the understanding that ICC has a spirit of helpfulness, which bottoms in their seemingly flat organisational structure. Manager 1 stresses this fact by describing the way feedback is handled within the company and projects, "there is a lot of feedback streaming in, which means that we have a pretty open climate". This view on ICC's feedback culture is further explained by Manager 1 when highlighting the culture of helpfulness:

> "I don't get any feedback saying that we are uninterested in helping each other. On the contrary, I'd say there is a very big interest in helping. If we can [help], we do it." – Manager 1

Engineer 3 further explains how they experience the aspect of helpfulness within the company. Despite being considered junior in the context, Engineer 3 relates the culture at ICC with some previous experiences outside of the organisation and describes distinct differences.

> "I have worked together with people in the past who had a tendency of not wanting to share their expertise. They wanted to be the experts themselves. I have not experienced that here [at ICC]. Here it feels more like you want to share, and the most important thing is that the project becomes successful. There is a good atmosphere, and I think that is one of those cultural things that is just imprinted in the walls. That's just how it is here." – Engineer 3

Engineer 1 describes it as the company is mainly competence driven, and as such, everyone is able to ask each other questions openly, "It's much more about competence. That's what guides us. Of course there are still remnants of this in other places, but ICC is definitely not such a place". Manager 4 appears to be devoted to this cause and actively encourages members of a project team to ask for guidance if needed.

> "I'm always trying to be there. That's what I tell everyone, 'I can answer, ask any questions you want to'. [...] Ask it, and I will do my best to answer it, or otherwise, I will find a solution to it." – Manager 4

In order for people to become helpful, however, it is believed to be a requirement that people need to know each other, or at least have met each other before. Manager 3 describes this requisite in terms of working in projects, "when you are working on projects it is extra important with team building. To have a welded team becomes even more important when you are working as a consultant". Manager 3 implies a notion that when employees are feeling included and part of the team, they tend to be keener on incorporating the depicted culture of helpfulness. This means that there is both an explicit, although mainly implicit, idea that the culture is designed around the employees living up to these expectations and embracing the present norm of being helpful since it is 'just how it is here'. These expectations seem to be derived from a multitude of factors, and where they might stem from are elaborated upon in the following subsection.

4.3 Perceived Expectations

Expectations have throughout our interviews been a subject that surfaced when the employees at ICC were asked to describe how they experience their work. Since ICC is a consultancy, thus earning its revenue by providing a service to external customers from a wide range of industries, their innovation process is strategically kept on a generic level. The innovation process, as

described by Manager 2, only needs a few "necessary steps" in order to be successful. The success factors of a project were, according to the interviewees, an idea of keeping things simple to make the process clear and easy to progress, as stated by Manager 1 and 2.

> "By filtering out these most important needs, it also becomes very clear for the team what to innovate around, which makes the conceptual phase very clear." – Manager 1

> "Another thing is simplicity. When things get too complicated, it results in that it doesn't get used. If it's too limiting it [the process] becomes too rigid, it leads to the process is not being used or that you choose to find shortcuts" – Manager 2

Both Manager 1 and 2 are accrediting some success of ICC to their innovation model, allowing them to manoeuvre through their innovation process more easily. The 'necessary steps' that Manager 2 refers to are in most projects related to three different aspects of their innovation process, which are directly linked to the role of project management. The three aspects mentioned are scheduling, budgeting and resource allocation, no matter which kind of project or size of the project, these three activities must always be taken into consideration. Manager 2 relates to it when referring to project management: "[...] we have things that must be done. It's not something that we can make up ourselves". Despite these seemingly rigid steps that need careful considerations, the generic approach is specifically designed to be flexible. Although there is a predetermined approach to innovation, our analysis composes a general understanding within the company that innovation benefits greatly from few rules and regulations., hence providing a sense of freedom for the people involved in the innovation process. Manager 3 puts this flexibility as an absolute necessity when working with innovation by stating: "we need to be flexible, light on our feet and open-minded. [However,] it's always a compromise between the project and the team members." What Manager 3 mentions as being 'a compromise' is the balancing act between following the process or allowing more freedom for team members. Orchestrating this congruence is referred to by Manager 2 as 'finding the very hard-to-define mean'. How to find this mean is rarely explicitly stated, although a way to provide flexibility to team members is simply by stating the expectations of the particular project through a start-up meeting or similar. These expectations are sometimes explicit. However, in many cases, the expectations of each team member are rather subtle and

subject to individual interpretation. In essence, what is expected of each employee is implicit. How these differences have come about are elaborated upon in the coming subheadings.

4.3.1 Expectations from Managers

Interviewing different levels of employees resulted in varying degrees of witnessed expectations. The four managers provided results that highlighted the organisation's expectations from a management perspective, both as formal and informal processes expectations. The results underline issues regarding miscommunication, subsequently leading to shortcomings in the understanding of expectations in the innovation process. If the expected deliverables in a project are not clearly communicated, there is a risk that stress gets built up, as stated by Manager 1:

> "A typical problem can be that we have not been clear about what the deliverables are in the project [...] and not knowing them builds up stress that neither we nor the customer or anyone wants." – Manager 1

However, the unstated expectations have a perceived linkage to which level of experience and relation the colleagues have with management. If employees have been working together with the manager before, the informal expectations and quality norms are suggested to a higher degree to be understood without the need for more formal communication. This is evident in the example provided by Manager 2:

> "Take [name] for example, we have been working together for many many years, so I do not have to say much when working together. My colleague knows exactly what I expect and vice versa." – Manager 2

In addition, Manager 1 further emphasises the informal, untold expectations with colleagues having past experience working with Manager 1:

> "I'm pretty meticulous about how I want it and on which level of performance [...] implying that a high level is expected. And those who have worked with me for many years know that's the only standard accepted." – Manager 1

The informal management expectations tend to be efficient when employees have past experience in working with the manager. It is implied in these results that unspoken expectations are

considered to be informal means of control since insufficient explicit expectations are subject to miscommunication and deliverables below expected performance. In these situations, management sometimes needed to intervene in projects when the expectations were not clearly stated and only built upon, what was believed to be, an already inherent understanding of the expectations. However, intervening would be the last resort since it is seen as an adverse action, as Manager 3 explains:

> "[...] otherwise the project manager will lose interest if he or she does not own the problem by themself. I will reduce the project managers authority if I go past that person". – Manager 3

When asked how expectations were communicated and if employees knew beforehand what management expected, Manager 2 replied:

> "It gets really messy if it is not outspoken. If I have an unspoken expectation that something will happen and it does not happen. Then it will be a bit messy." – Manager 2

When management sensed a need to intervene in a project, a recurring concern was the assignment of clear roles and what the expectations were for each role. This point to a direction of when management creates projects and assigns roles; it is accompanied by unspoken expectations of what the specific role entails. Manager 3 further confirms by explaining their experiences when stepping into a project to sort out why the expectations are not met:

> "When you ask a team member what needs to be improved when you go into a messy project, then it's usually a certain number of things that are brought to light, and unclear roles are a classic thing that recurs". – Manager 3

When asking one of the interviewed engineers how it affects the innovation project team regarding the management's definition and expectations of roles, the reply was:

> "If they are too clear, then you can lose the ability to take initiatives. If I feel that I have no say in the matter, then I only do what I am told. And then I risk losing some of my motivation. You take a more passive role where you do not come up with ideas; in the same

> way, you may not think creatively and so on. If they are too vague, then things risk falling between two chairs. You do not know who will take care of what." – Engineer 2

However, these expectations depicted as informal control challenge the management team in striking a balance between trusting the project managers and project team members with their competence to deliver expected results and the perceived formal control. Manager 1 is aware of the difficulty of this and explains how this balance is taken place in action at ICC:

> [...] that's somewhat the secret, it's like in a relationship or whatever, it must not be too control-driven but still some kind of humane framework for how the interaction should work between people as well." – Manager 1

These informal expectations do, however, demonstrate themselves in different nuances when comparing vertical influence as management expectations besides horizontal influence within project teams.

4.3.2 Expectations from Peers

Our interpretation of the data indicates that there are differences in expectations as informal control when comparing communications between managers and project team members. As advocated in the previous section, management appears to rely on expectations that are not explicit to empower project managers with trust to manage the project and only intervene when needed. However, expectations on a project team level indicate that informal control manifested as expectations are increasingly connected to the role rather than the individual. This is considered to influence the innovation process as team members are composed with an unspoken expectation of their deliverables to the project. When asked how team members find out what the expectations are to their role in a new project, Engineer 2 replied that "[...] it's about reading social codes. Some things are not said straight out, but rather implicitly understood". However, this does not imply that any formal procedures have not been official and that the expectations for each role were not explicitly communicated. Rather, as the focus for this thesis lies in the informal aspects, we centre our attention around those mechanisms that stretch beyond official records.

Moreover, the organic flow of tasks within innovation teams, according to our analysis, suggests that there is a gap between formal and informal expectations. Engineer 2 further illuminates the

need for clear roles in new projects since "when you are new to the project, it is very good to know what is expected, hence it is very good to have a clear role". When asked why Engineer 2 continued:

> "For example, how much authority you have in a certain role, how much you can decide for yourself or so. It's usually not said outright. For instance, is there anyone who will check everything I do or does this go directly to production? Can I come up with my own ideas or not? Should I come up with my own ideas? Uncovering that kind of thing usually requires a bit of fine-tuning." – Engineer 2

The ambiguity here appears to lie in how roles and their respective expectations are infringing boundaries of informal control of other roles and their inherent expectations. It is proposed that when ICC assigns clear roles, it implicitly entails that the project member should focus on his or her area without hybridizing with other team roles, meaning that the project manager can exert informal control through specified roles. Hence, the role holder will be responsible for unmet expectations. When asked how this affects the team, Engineer 2 said: "I think that collaborations work well when everyone accepts the roles they have. [...] If I feel that when everyone accepts their role, then things usually flow quite well." However, if expectations are not specified, the project manager can exert less control and project tasks and outcomes "are up to your own interpretation" as Engineer 4 said when asked how inadequate expectations affect their contribution to the project.

In addition, similar to the expectations regarding the management team, we can see indications that experience is an informal influence when it comes to expectations within innovation teams at ICC. As Engineer 1 said, "[...] with increasing experience, you can handle more things and more complex projects". This could imply that with increasing experience, there will also be higher expectations. These increased expectations are thus unspoken since people are most likely not re-updated on their expectations every day they show up to work. Hence, it builds up an informal expectation over time unless it is frequently gauged. Manager 2 further confirms this when saying:

> "We need to ensure that we have a satisfying level of experience in the areas of expertise that are important to the project. If it is a project that involves a lot of plastic construction, then we cannot put a junior plastic designer on it, then we need someone who knows [i.e.

> have done it before]. Someone more senior. If we have a project that includes advanced firmware development, then we must include a senior in the team." – Manager 2

This indicates an expected reliance on experienced team members at ICC. However, when we asked Engineer 1 if there is a feeling of receiving a more important role within the team due to having long experience, the reply was, "when people have been up and running for 5–10 years, it doesn't matter anymore", thereby implying that there is an expectation saturation for employees within ten years of experience. Contradictory, when we asked how comfortable Engineer 2 was in taking or supporting decisions, Engineer 2 replied, "generally not so confidently maybe. I do not have that long experience really. I have not even been in this business for ten years". Worth noting is that Engineer 2 is in the upper range of the 5–10 year experience, which Engineer 1 identified as a threshold for informal expectations to be saturated. Moreover, Engineer 2's answer does imply that there is a complex web of factors determining whether one reaches up to the senior level of informal expectations related to experience. This contradiction is elucidated by Manager 2, who explains what being senior at ICC means:

> "It is clear that there is a greater risk of using junior competence theoretically. However, it does not always mean that it gets worse. We have many examples of junior people doing a brilliant job. And their deliverables are great. This also goes the other way around, where we used senior competence where the results may not have been as good as we expected. So you can be a senior in many different ways. Seniority definitely does not only have to do with age. Far from. Being a senior has a lot to do with how you are as a person." – Manager 2

This statement highlights a belief that senior expectations are necessarily not measured in age or years of experience, instead as a set of skills, including soft skills that cannot be numerically measured. This further emphasises that senior expectations are not always spoken or specified, which in addition is a vehicle of informal control when senior expectations can be addressed across official business titles. These presented images of implicit expectations often appear to manifest themselves in an increased sense of responsibility within the employees at ICC.

4.3.3 Expectations Resulting in Informal Responsibilities

At ICC, responsibility seems to be a result of the prevalent organisational culture and the expectations built within it. Some parts of the responsibilities are suggested to be derived from a sense of pride and abiding by a larger collective interpretation of what it means to be an engineer and an employee of ICC. The sense of responsibility seems to be a result of both this collective idea of what it means to be working in a specific sector, an obligation to uphold the reputation of one's peers, as well as a sense of professional longevity. Because of the expectations expressed at ICC, there is a belief that there is a risk to become the subject of scrutiny if the expected level of performance is not met. Engineer 4 expresses both of these aspects.

> "Since I am an engineer, I want to do a rigorous job. You are not going to do a bad job; otherwise, it will only come back to haunt you later. [...] I feel that I still need to do it properly because you keep your back clear if you do so." – Engineer 4

Engineer 3 expresses similar feelings as Engineer 4 regarding taking responsibility and being accountable, "I feel uncomfortable and stressed if things don't go well". Engineer 3 also stresses the fact that when working on details in a project and being allowed autonomy, there is a risk of overdoing it, thus taking personal responsibilities too far despite being aware of the fact that no one will probably notice the amount of work that is allocated to those details.

> "But if it's something I feel personally, that this [small detail] could have been better looking or something similar [I overthink it], someone else might not have even noticed it. Then it's no big deal. Then I'll just have to think it through myself and move on, most often you see things yourself, but everyone else thinks it looks great." – Engineer 3

Engineer 3 states the opinion of possibly doing some minor aspects better as something that is only felt personally, implying that the demands employees put on themselves and their work exceeds what might be reasonably expected of them. This sense of perfectionism and being responsible for ones work is indicated to be understood and implemented on a managerial level. Manager 4 has taken this suggested pride and norm of taking responsibility into account when managing projects. Micromanagement is generally frowned upon by members of the management team, and instead,

it is proposed that all employees will do the right thing if given the opportunity. Hence, the dimensions of claiming and feeling responsibility seemingly become a source of informal control.

> "I like to give my project members a lot of responsibility. I don't want to micromanage. I do, however, want [everything] to be transparent, and you are supposed to do what you are responsible for in that specific project. I think this generally works well. [...] People are skilled and most often do what they should. Most people want the best [for others]". – Manager 4

Manager 2 extends on the beliefs of Manager 4, "I don't like micromanaging. I'll do it if it is needed, but unwillingly. I still want the project to be successful". The disregard of micromanagement on a managerial level is further a testament to the perceived power of this form of control, at least regarding the quality of one's work. The need for freedom expressed through the reluctance of micromanaging is also resonated among employees working with specific tasks in a project. Engineer 4 mentions that there is much joy connected to working more 'spontaneously and unstructured', expressing a need to be able to claim responsibility, and in return, be allowed autonomy. However, there seem to be some discrepancies when it comes to the level of autonomy requested by individual employees. Engineer 3, for instance, says the following when asked about the role they take when assigned as experts on a specific topic in a project:

> "Perhaps you don't want to say too much either. If I say that I think this will take two weeks to complete, then it could be interpreted that you have promised that things will be done in two weeks." – Engineer 3

In addition, Engineer 3 indicates that there is a limit to how much freedom is wanted in a given project since there is an expectation to deliver on what is promised. If there is a lack of experience, it can be challenging to estimate how long specific tasks take to perform, which may result in the autonomy provided in the project becoming a limiting factor since promising something that is unsure could result in a higher sense of pressure and responsibility.

Furthermore, the perceived pressure and the inherent feeling of responsibility, suggested to be derived from their beliefs as professional workers, while being seemingly directly related to the

expectations they have on themselves and others, also appear to be regulated depending on their experience.

4.4 Experience as Informal Entitlement to Control

One theme that emerged early in the analysis of our data was the informal control embedded in an unspoken hierarchy based on experience. As explained in the previous section, experience was argued to be one factor affecting the sum of the expectations as means of informal control. Hence, we will further explain and interpret the data, which we believe emphasises experience as a mechanism for informally controlling innovation processes. When asked how final ideas are generally selected in the conceptualisation phase of the innovation process and when formal methods were insufficient, Engineer 3 replied, "then you have to rely on more experienced team members who have a sort of veto or something". Engineer 3 further explains that even though ICC has a well-rooted and generic framework for their innovation processes, giving experienced colleagues informal control can avoid stress regarding both time and budget in the phase of evaluating ideas when "in reality, you don't do big matrices because it takes too long. Instead you rely more on your gut feeling and experienced co-workers".

When asked what characterised a high level of experience, Engineer 2 answered that "it is usually the informal status and self-confidence that comes with many years in the industry or within the company". Employees considered being highly experienced show tendencies to be more entitled with informal control, which goes both ways. That is, managers are influenced by and rely on experienced employees' support in decision making, and project team members respect experience as an informal hierarchical structure. As explained by Manager 3:

> "We have an extremely experienced industrial designer whom I have all the respect for in the world. So if you want to wrap up any [innovation] phase, then it is a good idea to start with that person. So your decision becomes anchored, then you get support from that person in further discussions." – Manager 3

Manager 3' statement further supports our interpretation that experienced employees play a vital role at ICC in decision making by channelling ideas through experienced co-workers to be anchored, spread, and validated in project teams. As earlier mentioned, this also goes the other

way around, where co-workers seemingly appraise experienced colleagues and allocate informal control upstream the unwritten chain of the experience hierarchy. When asked what characterises a respected decision, Engineer 2 answered:

> "Of course the authority on paper [the decision-maker has]. However, you also weigh in things that are not as clearly stated, such as a lot of experience, I would say." – Engineer 2

When asked why, Engineer 2 continued, "people respect experienced co-workers for their knowledge, often because it has not become obsolete". This has also been acknowledged by the management team at formal meetings where more experienced employees, without being assigned more influence or control than any other of the project members, take the lead on issues or decisions. Manager 3 explain why some employees are more influential than others:

> "In order to arrive at a decision, you have to work in the right way, and usually it is those who have worked for quite a long time and have very strong opinions which are influential. With their experience, they are, of course, good at arguing as well. Those arguments get a lot of weight if you do not come up with an alternative." – Manager 3

However, Manager 3 further emphasises that more inexperienced employees usually also get air time, although their voice is more in need of being amplified through support and given the opportunity from a manager.

4.4.1 Clashes Between Experience and Influence

At ICC, it is perceived that experience and informal control is unofficially assigned downstream from management and upstream through an unspoken hierarchy. However, our interpretation suggests that there is a clash where employees feel that their experience is not accredited with a satisfactory amount of influence in the innovation team and its decision making. Team members express tendencies to feel entitled to more influence than what is being given, considering their own perceived level of experience. Engineer 2 gives an example of this:

> "I was recently in a project where I felt pretty pinioned. I had a very limited role, and I felt I had more experience in what was going on than they [management and team members] thought I had" – Engineer 2

Furthermore, this links back to the previously stated organic task flow in projects when roles are clear, as presented in section **4.3.2**, where employees perceive collaborations to be good and workflow smooth when all team members accept their role. Moreover, as roles come with a particular set of spoken and unspoken expectations, there appears to be a collision when a role is not accepted, or there is a clash between the expectations of the role and the experience of the role holder. This clash is evident when a role holder senses that their experience is being undermined in their assigned role and the influence they can exert. Hence, not accepting their role without friction. Engineer 2 further explains this phenomenon:

> "When you notice that someone, or yourself, wants more influence than you have, then it becomes frustrating. If I feel that I am not allowed to make decisions that I feel I can make, or at least those feel I confident to take, then there will be frustration and irritation in the project" – Engineer 2

When asked how Engineer 2 acted in those situations and how to handle the discordance between the role, its entitlements, and the perceived individual level of eligible influence, the reply was, "you don't know. It's a game of social risks. And you are always on thin ice when it comes to presenting criticism [within this specific context]". However, finding the perfect match for members of the team, their roles, and their personal sense of how much influence they should be accredited with is a seemingly tough challenge. In addition, when the informal hierarchical structure based on experience is aligned with the formal roles, its expectations, and the entitled influence, Manager 2 describes being a project manager as follows:

> "There is no job that is as simple as being a project manager for a team that is experienced and knows exactly what is going to happen and how it's going to happen. And that the right person takes his or hers responsibility to make sure that things are delivered on time." – Manager 2

Lastly, the understood interrelation between organisational culture, expectations, responsibilities and experience influencing the innovation process at ICC will be further elaborated upon in their perceived symbiosis with supportive behaviour in the next section.

4.5 Influencing via Support

A majority of our interviewees, at all professional levels, demonstrated that support between employees proved to be one of the most influential mechanisms that shaped informal control within innovation processes. Since working with innovation, especially at ICC as innovation consultants, encloses ambiguity regarding their operative tasks. Hence, asking for help, guidance and support became an established informal practice among employees at ICC to cope with uncertainty and ambiguity connected to their day to day operation and problem-solving. In addition, ICC employees illuminated in the interviews that support was an influential mechanism in decision making by creating a 'critical mass' of supporting opinions before presenting criticism or suggestions for change. However, support as a factor of informal control is substantiated by earlier mentioned mechanisms where culture, expectations, responsibilities, and experience are overlapping themes serving as requisites to outline the supportive environment as informal control.

4.5.1 Supporting Others

ICC has, throughout our interviews, highlighted their supportive environment, which seems evident from all studied perspectives of the organisation. One of the dimensions is how their perceived support is affecting others and how it both formally and informally controls individuals as well as entire project teams. Manager 4 explains this type of supportive control:

> "If you just leave it to a lot of engineers to solve the problems, it's going to get messy. Although they're all really smart and sharp, support is needed to organise and steer the situation. I believe in freedom with responsibility with underlying support." – Manager 4

Moreover, since support is evident as a compounding overlap between earlier identified mechanisms, Engineer 1 highlighted the experience factor when supporting younger talents: "[...] it is better to support and try to guide younger colleagues who may not have much experience or all the other prerequisites if you say so."

In addition, more junior employees further recognise this informal hierarchy of experience when, or when not, to provide their support. When designer Engineer 3 was asked whether expertise changed how support was given within their team, Engineer 3 replied that "yes, but you can do that [give support] if you are a more experienced engineer", implying that junior employees give

interpretive prerogative to more experienced co-workers, before aiding with their expertise. Moreover, Manager 3 encourages more experienced employees to informally take responsibility for new or young employees, saying:

> "You always support each other, and the seniors should support the juniors to a larger extent. [...] However, sometimes it is explicitly said that seniors should support the juniors, although not always." – Manager 3

By this, Manager 3 might imply that senior employees formally should support the junior ones to ensure comfort in their new professional environment. However, it might also further imply an active informal control motivated by business factors as Manager 3 suggests:

> "Although there should always be a senior sounding board for juniors, there are some complex parts that are difficult for a junior to see. Thus, [if not controlled] it has ripple effects a few weeks later, and it can be an incredibly more expensive solution, or impossible to manufacture, and the customer will never pay for it." – Manager 3

This kind of support is of both formal and informal character, where management assigns supporting roles to aid younger or less experienced employees at ICC. As Engineer 1 says, "my team leader asks if I can support a colleague. Usually a younger colleague who is newly graduated or newly hired or so". Engineer 1 further elaborates on this topic:

> "You have to listen to what [kind of help] they [new employees] are asking for. Then you just need to push a little in the right direction, and they usually solve it themselves". – Engineer 1

Engineer 1 continues in the same spirit, saying that "on the other hand, I can say what I think is right or wrong and try to push people who are interested in taking part of it, in the right direction", further highlighting that it is a formal responsibility to guide young professionals. However, it is Engineer 1's opinion on what is right or wrong that guides the support and what is deemed to be 'the right direction'.

4.5.2 Requesting and Receiving Support

At ICC, support is part of everyday business. Even though employees occasionally see themselves working solo in projects, they most often work with the mindset of being part of a team. Engineer 1 displays his thoughts on the matter:

> "Both work, but I prefer [working in] teams. [...] Sometimes you may end up with a task which no one else is working with, but they are still close enough so that you are able to have a chat by the coffee machine if you need another perspective." – Engineer 1

As Engineer 1 mentions, although being alone in a project or a task, there is still a need for receiving support and feedback. The support aspect is therefore not isolated to within the frame of the project but rather a company-wide phenomenon. While there is a strong sense of teamwork at ICC, support is often something that is requested from someone looking for input on their work. It further comes across as inexperienced employees are expected to request help more often than experienced employees. This is stated explicitly by Engineer 3 and 4 when asked how they are working with receiving and offering support. Engineer 4 says, "since I am the newest in the team, I will need to seek help from others", while Engineer 3 puts similar thoughts as "I am most often considered junior [in the team], so I don't [offer that much support]." However, both Engineer 3 and 4 express that they are not afraid of addressing irregularities to more senior members of the team when noticing something that is not working as expected or presenting new ideas. The approach for identifying and presenting either irregularities or new ideas, on the contrary, seem to be the same regardless of one's seniority, experience or role. Engineer 4 presents the following when asked about how they receive support for their opinions:

> "Something you can do is that you attempt to sow a seed in others, so you get more people on board. [...] Perhaps you mention to people that what we're doing now is not working as intended; perhaps we can do it differently. You've got to try and get your ideas out there, and you might get some people backing your idea." – Engineer 4

Engineer 1 mentions similar experiences when they present how they work with support, and they stress the importance of 'building a case' and create a shared understanding of the problem.

> "If you believe that 'this can't be right' and you need to bang on the big drum and talk to the tech lead, it's usually better to build a case [with your co-workers] first. That way you discuss with your colleagues and create a common view" – Engineer 1

Engineer 1 presents the idea of building a case and creating a shared understanding between colleagues, and through this agreement, getting support for ideas or concerns before escalating them. Building a case can possibly be interpreted as informal control since employees actively try to gain a majority in favour of their idea before it goes to voting. Presenting an understanding of a problem as the shared understanding of the project team also appears to serve as defence from potential backlash if things do not go as intended. Engineer 2 elaborates on the importance of receiving support and sharing ideas since it reduces pressure:

> "It's fun working with your own idea and having that personal responsibility, but it shouldn't be that [the project] is not dependent on one person's design. It could get quite heavy for that person if something were to go wrong" – Engineer 2

Engineer 2 also expresses, contrary to Engineer 1's approach, that support is something to look for when there already have been attempts to escalate concerns or ideas, although seemingly not getting the response that was anticipated, which instead becomes a source of frustration.

> "[...] and then we vented it between each other [within the project]. That is the best way [to do it]. So we talked about it, and then you have to think about whether we can do something about it or not." – Engineer 2

The support requested from colleagues as such is a second option if the initial feedback fell on deaf ears. The support being requested from members within the team is expressed, as presented, in different ways. However, there seems to be a common understanding of how one approaches collecting the right amount of support and where to go with ideas or concerns in order to get the most impact. Engineer 1 mentions this as reaching a 'critical mass' of opinions, "it usually ends up being a critical mass of opinions swaying one way which might convince someone". The critical mass that Engineer 1 mentions is further practically elaborated upon by Engineer 4 when presenting how to achieve this mass in the quickest and most convenient way.

> "Normally, I think it's best to go past someone['s office] and present your ideas. It's usually easier to convince someone [when doing so]. [...] Preferably you go to the person who is in possession of influential power in the matter." – Engineer 4

Engineer 4 suggests that in order to reach this critical mass or get indications on whether getting support will lead somewhere or not, is dependent on the people who get on board early. It is suggested that if people with influential power supports an idea, there is a greater chance to make changes. Engineer 3 has similar experiences and mentions that the general approach is first to try to get support from colleagues that have previously shown support, "perhaps you band together more if you know that you usually get support from certain people". Who these 'certain people' are is dependent on the experiences of working with different people and getting a sense of how they believe things should be run, as well as finding people with similar beliefs who interpret things the same way. However, Manager 3's view is that the further up the formal hierarchy the support comes from, the higher is the likelihood of getting the presented changes implemented.

> "Then you perhaps need to start in that end because if [the CEO] is not on board, it might be hard to get others on board. So it might be important to start with the right person. [...] Anchoring is generally important!" – Manager 3

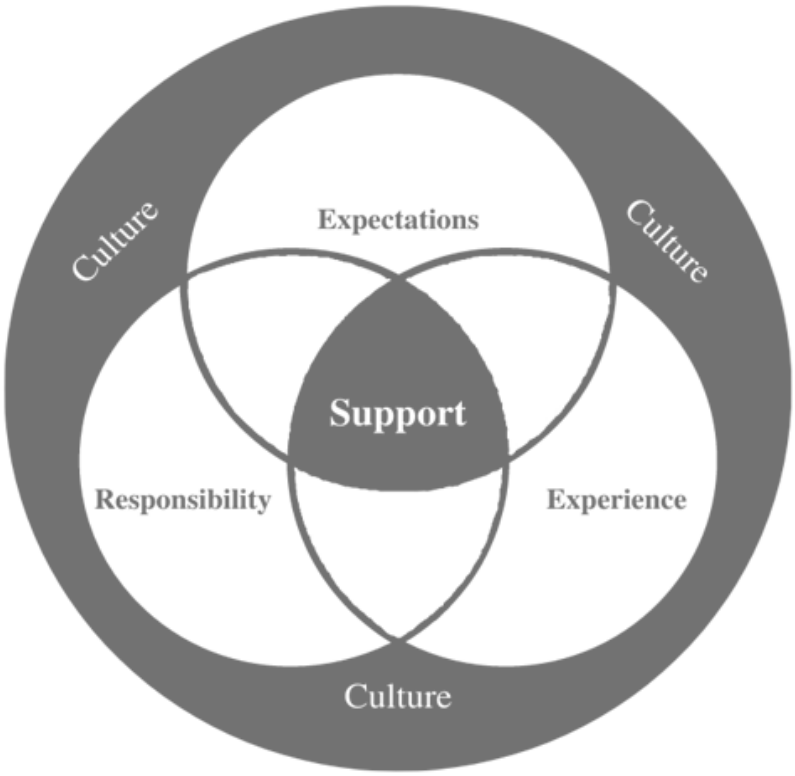
Despite the presented experiences of an organisational culture with a flat hierarchy and the camaraderie present at ICC, when it comes down to the wire, it is generally better to get support from a manager. These presented experiences of requesting support at ICC points to a common understanding of informally trying to gain support for ideas before they are presented as official feedback. Getting the group's support for ideas either implicitly or explicitly is deemed critical to maximising the chances of success in driving change, both within a project and the entire organisation.

4.6 Empirical and Analytical Overview

Our analysis of the empirical data illustrates that informal control mechanisms within innovation processes are subtle and intertwined with formal control. Moreover, the identified themes derived from the interpretation of our data appear to be dependent on each other. Furthermore, the isolation of one theme is seemingly not possible. Based on the presented results and analysis, our suggestion

is **Figure 2,** showcasing a summary of the identified factors highlighting the interplay of our findings. We propose that culture serves as a core, encapsulating the other identified influences of; expectations, responsibility, and experience, which in themselves serve as a prerequisite that enables the act of support as a medium of informally controlling the innovation process depicted at ICC.

Figure 2. The overlapping interplay between our empirical findings regarding informal control mechanisms within innovation processes.



5. Discussion

Building upon our analysis in the previous chapter, this chapter discusses our results as well as comparing and positioning it with the existing body of literature, which was identified in the literature review. Our discussion will assume its stance from the empirical overview presented earlier in **Figure 2**. Moreover, this enables us to align our discussion points around findings relevant to the stated purpose of this thesis to explore and understand the influence of informal control mechanisms within product innovation processes. By using our empirical overview as the foundation for our discussion, we broaden our interconnected findings to elevate a discussion beyond isolated informal control mechanisms, thus elucidating insights our analysis may propose. Firstly, this chapter will discuss the overall organisational culture and how it is collectively used in practice to control innovation processes informally. Secondly, the three intertwined informal control mechanisms inclined towards individual behaviour, derived from responsibilities, expectations and experience, will be discussed before debouching in a discussion about support as informal control. Support as informal control will be recognised in the multilateral realm of a collective and individual phenomenon.

5.1 Culture as a Collective Mean of Informal Control

The presented image of a 'happy and positive atmosphere' depicted at ICC seems to be shaping the experiences of the employees in addition to how they relate to each other. Since ICC is an SME with approximately 150 employees, thus working closely together and know each other well. Because of this close proximity and connection with one's immediate co-workers and through the feeling of belonging to a non-hierarchical organisation, we argue that ICC is hosting a number of dimensions regarding cultural control such as social control, clan control, and professional control, previously identified in other companies and industries. However, unlike Barker (1993) suggests, these forms of control, when enabled in a seemingly positive and happy work environment, are not experienced as a stressful and negative form of surveillance and control. Rather, as the shaping of common beliefs, as suggested by Dekker (2004) and Kirsch et al. (2010), occur, they are built on the notion of positivity and helpfulness, thus shaping the informal controls in such fashion as well. Hence, the suggested manipulation arising through this informal control is not necessarily

existing or seen as something negative, as argued by Alvesson & Willmott (2002). Since most people know each other at the offices, there appears to be a common belief that a co-worker's reputation directly corresponds to their displayed personality and behaviour at ICC. Moreover, since there seems to be a widespread understanding of how 'it is here', people feel obligated to adhere to this understanding in order to feel a sense of belonging and fit in, similarly as observed by Ouchi (1979). However, as Jackall (2010) suggested, employees need to interpret the transmitted signals and behaviours explaining how 'it is here' in order to adhere to them and fit in. Since there have been instances of clashing roles and expectations while working on projects, there might be difficulties in interpreting these signals. As such, in the context of innovation, these clashes can result in hardships potentially suffocating the creativity needed for successful innovation or causing things to 'fall between two chairs'. Monitoring the perceived expectations when assigning roles in a project, therefore, further becomes a matter of importance when managing an innovation process.

As presented, employees are, to a large extent, able to define their processes to fulfil a task. Hence, it is suggested, both in theory and in practice at ICC, that employees have a sense of commitment to their work and want to deliver on their promises. The expectations employees have on one another adds up to them holding themselves accountable for their actions, similar to the self-control identified by Kirsch (1997) or professional control (Orlikowski, 1991). However, since the customer is paying ICC for their service of innovation, this informal control could be seen as a derivative of the culture of helpfulness and their happy and positive atmosphere. This phenomenon can further be seen as extraction from social control since employees have built reliable connections, resulting in an even higher intrinsic pressure congruent with Stewart et al.'s (2012) discoveries. Moreover, this pressure is emanated from the expectation of fulfilling an assigned role correctly, which in turn allows the other project members to have the best possible chance to embrace the value of customer satisfaction. Thus, honouring their part in the strive to maintain the culture of helpfulness and positivity.

5.2 Constructing and Meeting Informal Expectations

Building upon our interpretation that expectations in many ways differentiate themselves, whether it is from a manager's perspective or a project team perspective, highlights different informal

mechanisms of control within ICC. These implications are further interesting since managers appear to influence the innovation process through informal expectations, and the effects illuminate an issue regarding miscommunication leading to a gap in understanding the expectations in the innovation process. However, this concern seems to be connected to the level of experience of the individual employee and the inherent relation to the manager in question. This is derived where prominent results highlight the synergy between informal expectations as control and past relational and professional experience. However, exactly where the line can be drawn of what type and the length of the collaborative relationship are subject to discussion. Moreover, managers at ICC are struggling to find the balance between leaving decision making and deliverables to informal expectations and formal control. This has led to situations where managers had to intervene in projects as a last resort to steer them in the right direction when miscommunicated expectations, amongst others, were not enough. In hindsight, the root cause usually is unclear roles and inherent expectations of each role, which tends to be a recurring issue.

This furthermore adds a layer of balancing complexities whether managers should assign clear roles with clear expectations or leave some of it up for interpretation. These findings are in line with Schilling (2020) and Larsen & Bogers (2014), who emphasises the importance and difficulties in finding a structural balance between informal and formal control within innovation processes. Where too tight controls may stifle innovation effectiveness, as proposed by Guo et al. (2018), and an overweight reliance on informal control may result in a weak alignment between operational tasks leading to misunderstandings as described by Jørgensen & Åsgård (2019). While our findings are in parallel to existing literature, the underlying issue surfaced by roles and their inherent expectations in the innovation process have not been described in previous literature. Hence, our findings augment the literature that expectations as informal control do not necessarily have to be consistent with only individual expectations, rather as a compound of expectations derived from roles and experience. Furthermore, the quality of expectations as informal control seems optimal in an environment incused by long-lasting professional relationships and relational experience, which we argue has not been highlighted in previous innovation studies before.

5.2.1 Building a Sense of Responsibility

Further derived from the culture and the expectations present at ICC is the act of taking responsibility seemingly permeating through the organisation. As evident from our analysis, organisational culture is being carefully governed and remedied by employees and managers by actively abiding by norms and perceived rules of the collective. However, there appears to be a different sense of pressure and collective which employees feel a responsibility to embody and to be part of their professional community. By identifying themselves with a pride directly linked to their profession, employees also tend to display an urge to uphold the seemingly good reputation of this profession. Taking pride in work is then collectively enhanced as fellow employees also feel a sense of pride in their work. Thus, there is a growing incentive to abide by the responsibilities perceived to be attached to being an engineer since there is a risk of scrutiny by co-workers if stray from the general understanding of what being an engineer is. These findings are further acknowledged by Ouchi (1979) and Tucker (2019), who emphasises responsibilities as informal means of control conveyed as underlying expectations. Hence, this sense of belonging to a profession as well as the underlying culture implies that there is a high prevalence of professional control being shaped informally by unconsciously influencing the employees through the creation of a shared belief system as described by Orlikowski (1991).

The organisational structure at ICC could be described as inclined towards an organic system, as expressed by Schilling (2020). Hence, both employees and management depict the hierarchy as being flat, and there is a suggested operational leeway given to the employees. This structure should, according to Larsen & Bogers (2014), provide a breeding ground for experimentation that enhances employees' innovative abilities. Although, we are unable to measure whether the employees are more innovative through the incorporation of a more organic structure within the scope of this study. However, there are indications that they believe so is the case since they depict a consciousness of this operational leeway which they deem is needed for innovation. In addition, this is further interesting since it can be interpreted that employees are more innovative if they have the perception of being a part of an organic organisation, although to what extent in practice can be discussed, being somewhat of a self-fulfilling prophecy. This further nurtures the discussion regarding the managerial activities of delegating and how employees feel responsible in their assigned role in a given situation and project. There are suggestions that the innovation process works smoother when employees are allowed autonomy. Because of the organisational culture,

employees also perceive they have the influence to request autonomy if they experience an assigned role to be limiting and restraining their level of performance. Hence, there are indications of an understanding that the more formal control being implemented, such as behavioural control as described by Guo et al. (2018), will limit employees in their creative process and thus restrain the innovation capability. Accordingly, our findings partially contradict Jørgensen & Åsgård's (2019) explanation that managers who trust employees with freedom and autonomy interpret it as managers discharge themselves from responsibilities.

5.3 Controlling through Informal Experience Hierarchies

Another central finding based on our understanding of informal control within innovation processes relates to different degrees of employee experience. Our analysis presents a notion that experience as an underlying force to gain informal control is twofold. First, there has to be a tangible reliance on experienced employees from managers. Secondly, there is a need for social acceptance among other employees to respect the informal experience hierarchy. Moreover, this finding is in agreement with previous studies where Ouchi (1979) highlights the social acceptance and collective behaviours as to respect experienced employees with informal control. At the same time, Derber & Schwartz (1991) and Merchant (1989) emphasises the importance for managers to reach objectives by devoting trust to experienced employees to cope with complex tasks and apply relevant problem solving independently. Hence, our findings regarding experience as informal control are partially aligned with previous studies taking this parameter into account.

However, the difference lies in the perceived influential power employees feel they are entitled to considering their experience. Earlier scholars do raise awareness about the hazards with experienced employees informally taking advantage of their influencing power. As suggested by Raelin (1989), there is a potential clash between the informal control of experienced employees, if given to them, and managerial and organisational formal control and practices. Where experienced employees exploit their influence to pursue personal goals and objectives instead of those of the team or organisation (Holmstrom, 1989; Scase, 2016). Or, as proposed by Abernathy & Stoelwinder (1995) where experienced employees, if granted too much informal control, undermine formal managerial activities. On the other hand, we suggest another type of clash between experience and informal control where employees feel that their experience is not accredited with a fair portion of influence in the process of innovation. Despite extensive research

on the topic, the literature does not seem to elucidate this particular phenomenon. It might be due to the underlying abstraction of informal control per se or the complex and highly interdisciplinary nature of combining informal control mechanisms with innovation processes. Furthermore, our analysis implies that when there is a congruence between experience and the perceived amount of entitled control, both formal and informal, operations are described as smooth and collaborations to be good. This finding is fascinating since it emphasises the importance of aligning and balancing experience with roles and responsibilities. This balancing act can also be seen as a learning curve depicted by Dreyfus (2004) since an increase in experience leads to more intuitive actions. This intuition can thus, if correct, enable a smoother innovation process since intuition is regarded to be faster and more flexible than analytical reasoning, which is bound by regulations. This further helps in our understanding of the discrepancy between experience, roles and functional innovation teams. Hence, experience further sets the stage for leveraging informal control when being used as means to gain influence exerted through supportive actions.

5.4 Informal Control Shaped as Supportive Actions

One of the most salient aspects of informal control within the context of innovation processes at ICC was how support was used, received and requested among the employees. Support as an informal control mechanism interpreted in our empirical data is, however, embodied as an intersection in the social interplay between experience, expectations and responsibilities, as visualised earlier in **Figure 2**. This is mainly explained by the presented results since the overall organisational culture comes across as being embedded in an environment that encourages supportive behaviour. This social intersection is a complex set of commonly shared norms, values and beliefs which are upheld by each individual, as in accordance with Stewart et al. (2012). However, our illustration points to the direction that junior colleagues recognised the informal hierarchy of experience in relation to the support system. In addition, responsibilities are also added to the web of informal mechanisms, which rests upon experienced employees that are expected in both formal and informal structures. Support as informal control impacts innovation processes in which behaviours and methods are supported. Hence, the informal measures are evident in the assumptions that experienced employees are expected to act as ambassadors for the organisation's culture, which will be an unspoken act of supportive informal control when having the ability to select which behaviours, norms, and values to breed.

Moreover, the social interplay between the employees was further illustrated by our analysis as requesting support exposed a subtle, although an effective, form of informal control. Employees at ICC most often requested confirming support from others before presenting criticism, changes or ideas similar to what was identified by Garud et al. (2013). This phenomenon was demonstrated both at the managerial level and team level. Since there is an understanding among the employees that some people are more eager to share their ideas and fight to see them proceed during the ideation phase, the experiences of this phase vary depending on the stance taken. These varying experiences of an event and what Garud et al. (2013) describe as 'temporal complexity' as such appears to weigh in during the early stages of the innovation process at ICC. While project managers believe themselves to be objective when facilitating a discussion regarding which ideas to proceed with within a project, there are indications that some ideas never see the light of day. Since there seems to be a consensus of the culture being happy and positive, employees might not want to challenge opinions that have already amassed a 'critical mass' in order to maintain a positive atmosphere. As such, reaching a critical mass is considered vital when selecting ideas, and it is not under the discretion of the project manager, and the ideation process is therefore shaped by the underlying informal control taking place within the project team. However, at a team level, it was more evident that sub-groups of colleagues supported each other in attempts to reach a critical mass of opinions to boost their chances to drive change, ideas and bring forth criticism successfully. This type of informal control proved to be more fruitful in influencing the innovation process, especially in the ideation and conceptualisation phases, compared to previously mentioned informal control mechanisms by themselves. However, as earlier mentioned, support as a mechanism of informal control is substantially derived from the synthesis of the other identified mechanisms. To further elaborate on this idea, our interpretation of the results indicate a relationship between expectations, responsibilities and experience to maintain the informal, supportive control, which in turn are individuals acting in a collective and norm-driven organisational culture. This is in the same vein as Escrig-Tena et al. (2021), who argue that support as an informal control mechanism is closely connected to organisational culture. Moreover, this culture is being upheld mostly by senior and more experienced employees, with informal expectations and responsibilities to regulate this culture.

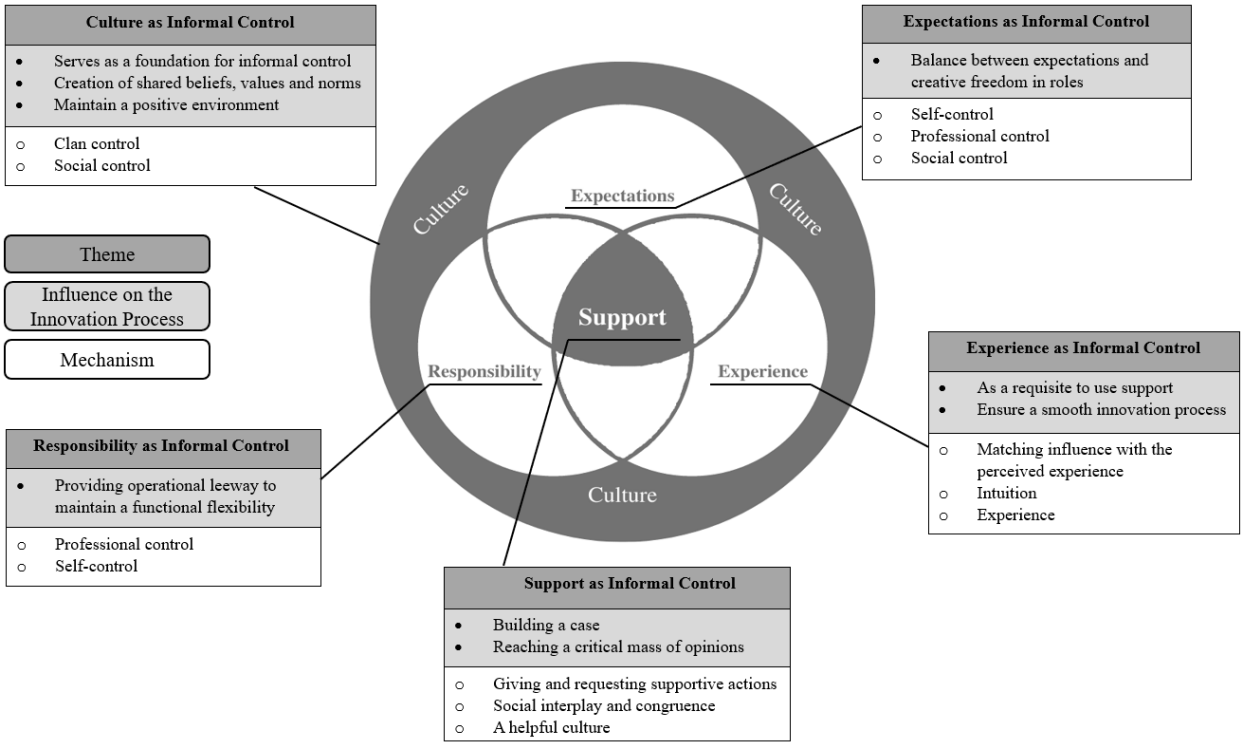
Additionally, building a case and reaching a critical mass or engaging influential persons in the matter before escalating it, is according to our findings, the most efficient way to reach informal control with the lowest risk for the individual. Moreover, a failure in gaining support is an

indication to retreat from the presented opinion. Thus valuable insights risk getting surfaced too late and cause avalanching issues in a later stage. However, although our interpretations suggest that this phenomenon is prevalent, we cannot with any certainty tell where the critical mass lies or how much influential power is needed to trigger actions of informal control. This phenomenon is moderately coherent with Brown & Eisenhardt (1995) findings where support within innovation processes is essential for team members to understand each other and coordinate operational tasks. However, the notion is that supporting acts are assembled to configure complex tasks towards a common objective and not to manipulate the objectives. Hence, a comparison with Brown & Eisenhardt (1995) findings reveals that while in our findings, team members also utilise support as informal control to exercise influential power in innovative processes.

5.5 Overview of Influencing Informal Control Mechanisms

Following our discussion derived from the empirical findings and analysis, we further elaborate and highlight the influencing informal control mechanisms that connect the overlapping themes presented earlier in **Figure 2.** Hence, further promoting our findings in the context of product innovation processes in an extended figure based on our discussion.

Figure 3. Informal control mechanisms as influencers of the innovation process.



6. Conclusion

The purpose of this thesis was to explore and understand the influence of informal control mechanisms in product innovation processes. To examine these phenomena, the following research questions were formulated:

> *How are product innovation processes influenced by informal control mechanisms?*
>
> *Which informal control mechanisms can be identified within the context of product innovation?*

Building upon a qualitative single-case study, we addressed these questions by exploring and identifying underlying mechanisms within innovation processes that we suggested gave rise to informal control. Our findings suggest that organisational culture, responsibilities, expectations, experience and support are mechanisms to exert various types of informal control. Moreover, our results further indicate that these factors are dependent on each other in a complex and ambiguous web of interconnected effects, which was comprehensively visualised in **Figure 3.** These informal control mechanisms influence innovation processes via culture as a collective phenomenon of shared values, beliefs and norms, which are demonstrably gauged by experienced employees. Whereas responsibilities, expectations and experience to a large extent informally influence employees' contribution to the innovation process through taking pride in their profession, the creation of roles, and abiding by informal experience hierarchies. Support is suggested to be an influential factor both through experienced employees breeding the culture and through team members requesting support to gain influential power. Furthermore, we found that experience, expectations, and responsibility is a prerequisite for successfully influencing the process through actively contributing with supportive actions or requesting support from others in the search for gaining a critical mass of influential power. Hence, this research further enhanced our understanding regarding the influence of informal control mechanisms by exploring their origin and how these mechanisms co-function within the context of innovation processes.

6.1 Theoretical Implications

Our findings advocate diverse theoretical implications and contribute to the existing literature by addressing the identified threefold gap in the academia recognised in the introduction. By qualitatively conducting this study, we were able to more exploratively identify experiences regarding the process of innovation and informal control in comparison to the extensive quantitative research concerning innovation and control. Moreover, by addressing informal control, we contribute to the scarce literature on this phenomenon which was called upon both by Pan Fagerlin & Lövstål (2020) and Tucker (2019). Furthermore, as we incorporated the social interaction between employees, we outlined their influence through informal control mechanisms within the diverse context of innovation processes, which to our knowledge has a shortage of attention in academic literature. Addressing this gap in the context of innovation processes is further stressed by Garud et al. (2013), Henri & Wouters (2019), and Longo & Giaccone (2017). A theoretical implication was to further increase the understanding of what role the creation of a collective organisational culture plays in providing the foundation for allowing informal control between co-workers and managers in a professional context. By building on previous theories regarding social-, clan- and self-control, we were able to extend how these, while being important in themselves for controlling work, were also found to be noteworthy in providing the basis to exercise support as a way of informally controlling product innovation processes.

6.2 Practical Implications

Practically, this study provides valuable insights both for managers strategizing for innovation and for team members working in innovative teams or projects. By further increasing awareness of influential factors, organisations, decision-makers and team members can consider a broader range of activities when managing or participating in innovation processes. In addition, by stretching practitioners' knowledge of what might occur within a team working with innovation on a day-by-day basis, this study also provides practical clarity and understanding to what extent organisational culture influences innovation processes. Hence, enhancing the comprehension of how practitioners relate to expectations and responsibilities depending on experience. Relying on how these three factors are combined, team members or managers are then able to actively engage in acts of support which could be understood as a way to informally control, although controlling the innovation

process itself may not be the intention. Being aware that these factors can be perceived as means of informal control, managers and employees can become conscious about the actual influence, and managers can better cope with informal forces. From a managerial point of view, possessing knowledge of how informal responsibilities, expectations and experience affect co-workers and operational teams may lead to more efficient leadership and less friction in the innovation process, when for example, assigning roles. Lastly, from a team member perspective, being conscious about the organisational culture and the support provided, received and requested influence innovation processes as a collective phenomenon. Being aware of informal experience hierarchies may aid in understanding how teams and managers act and on what premises decisions are made to steer operational tasks.

6.3 Limitations and Suggestions for Future Research

For the relevance of this study and to enhance transparency, we also point to the limitations regarding the implications and understanding of our findings. Since the methodological approach of this study has been qualitative, we are limited to not being able to statistically test any correlations between our identified themes of culture, expectations, responsibility, experience, and support, and how strong their relationships are in regard to our presented findings. Instead, our aim was to explore and shed light on these perceived gaps in previous research rather than to confirm or deny any previous findings. Hence, a recommendation for future research is to conduct a quantitative study, statistically testing the relationship between these themes and the correlation between them. Conducting a quantitative study has the potential of showcasing the importance of each theme and identifying which might be more influential in utilising informal control. Moreover, we were limited by time and the ongoing COVID-19 pandemic, disabling us from potentially increasing the data quality through observations to acquire an accurate foundation for constructing the worldview of the employees and explaining the influence of informal control. Therefore, we propose for future research to extend our research by adding multiple data collection methods to gain better insights into informal control within innovation processes.

The single-case approach of this study is also an aspect limiting the implications. Albeit we only collected data from one company and were unable to interview any customers due to confidentiality. Hence, the limitations lie in the exploration of the intricate dynamics of the

innovation process through a potentially one-sided lens. As such, it is difficult to generalise our findings to other environments outside the context of our case company. Thus, our findings might be idiosyncratic to ICC or other companies working with innovation consulting. However, this further opens the possibility for future research to extend these findings by incorporating a more extensive set of stakeholders such as customers, suppliers, or society. Since innovation includes many stakeholders, a suggestion for future research is to encompass a broader spectrum of interests to elucidate deviations or additions to our identified influencing mechanisms.

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Appendix A - Interview Guide

Introduction

1. Introductory background questions
    - Job title
    - Years working at ICC
    - Previous work
2. How would you describe your role at the company?

(Theme I) Innovation

1. In your opinion, briefly describe how a good innovation process works?
2. How would you describe ICC's innovation model?
3. How would you describe ICC's routines when working with innovation?
    - How are they followed? Why/why not?

(Theme II) Innovation processes

1. How is the working method you use to create ideas for different projects?
2. How are ideas shared and presented at ICC?
3. How are ideas selected, and on what premises?
4. How is it decided which ideas are to be further developed?
5. How are these ideas developed? By whom are they developed?
    - Why do you think it works like this?

(Theme III) Support and communication

1. How do you go about getting answers to questions regarding the innovation process?
2. Describe how you experience the support for:
    a) How your ideas are received (among both colleagues and managers).
    b) Implementing your ideas (support from both process and people).
3. How do you help each other to succeed in a project?
4. Describe how you work to make collaborations beneficial at your workplace.

(Theme IV) Control within the innovation process

1. What motivates you to create ideas and be innovative?
2. How is your work followed up? (ideas and operational tasks)
3. What personal responsibility do you feel you have in projects?
    - Can you give an example of a project you participated in that did not live up to the expectations? What were the consequences?
4. Describe how you perceive your influence on your colleagues.
5. How do you share information within the innovation process?

Appendix B - Reduction of Empirical Themes

Empirical theme	Reason for removal
Structure as control	Not regarded as informal control.
Need for continuity	Not regarded as informal control.
External input	Not regarded as informal control.
Leadership	Not regarded as informal control.
Business motives as informal control	Not regarded as informal control, not sufficient empirical data.
Surveillance as control	Not regarded as informal control, not sufficient empirical data.
Bias of your own ideas	Not sufficient empirical data.
Long term vs. short term	Not sufficient empirical data.
Competence	Superfluous, data fit better into other contexts. (Experience & Expectations)
Informal communication	Superfluous, data fit better into other contexts. (Experience & Expectations)