Management control systems in digital native companies

A single case study of a digital native telecommunications company

Abstract

This paper aims to investigate how digital native companies design and use management control systems with regard to digital innovation. Existing literature on management control and digital innovation are concerned with companies that are in the midst of a digital transformation process. However, today many businesses are born as a consequence of digital innovation, which is why that research does not fully apply to these companies. We therefore developed the definition of a "digital native company", by elevating the notion of a "digital native" to an organizational level. By conducting a single-case study on a digital native telecommunications company, an in-depth understanding of the characteristics of a digital native company and what implications these have on the different elements of their management control system was derived. By using the Simons (1995) levers of control framework in combination with literature about digitalization and accounting (management control), this study highlights different aspects that should be considered carefully when designing and implementing management control for digital native companies. The findings are summarized into four central areas. This study finds that digital native companies demonstrate significantly different characteristics than companies that have previously been studied with regard to digitalization and management control.

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1. Introduction

As digital innovation has evolved, digitalization and the way it affects information systems and management control has been a well-researched topic. New information systems and technologies, such as robotics, Enterprise Resource Planning (ERP) and big data are described as innovations that offers new opportunities of increased visibility, but also elements that facilitate anxiousness about the implementation of them (e.g. Zuboff, 2015; 1988; Orlikowski, 1992). Research show how businesses struggle with the implementation of such technologies into traditional management control structures. Digital technologies are often used to generate large amounts of information for decision making, which tends to pose difficulties for accounting professionals as to determine what information is useful and reliable (Arnaboldi, Busco and Cuganesan; 2017). At the same time, increased automation from digital innovation might allow accounting professionals to focus more on effective analysis (Sánchez- Rodríguez, 2012).

One fundamental factor of digitalization is the notion that digital innovations and information technology is implemented into a business during the course of its life. However, as new businesses evolve, it is evident that information technology is not a phenomenon which is necessarily implemented into the organization. Some businesses are better described as being born as a consequence of digital innovation, which means that there is no stage at which the business has to adapt to digital innovations, they've had them since birth. These companies will be referred to, in this thesis, as "digital native companies", whereas the companies that digitize their organization will be referred to as "digital immigrant companies". We founded these terms, based on the definitions of "digital natives" and "digital immigrants", which are terms that are already established in relation to individuals. Myers, Sundaram and Vodanovich (2010) examine the use of information technology amongst digital natives, which is individuals that are born within the digital world. In the digital world, information technology is ubiquitous and keen. Digital immigrants are individuals that was not born in the digital world. They have rather learned to engage with the digital world at an older age.

The digital natives and digital immigrants exist on a continuum, where some individuals tilt more or less towards either definition. Rather the less, Myers, Sundaram and Vodanovich (2010) suggests that the two groups interact differently with information technology and that this would have implications for both private settings as well as operational processes within

businesses. It is the argument of this thesis that similar differences are to be found on an organizational level, which is why we elevated the concepts of digital natives and digital immigrants to an organizational level. Modern research has not yet distinguished between these two types of organizations when researching how organizations design and implement management control systems. Bearing this in mind, the research questions of this thesis is:

What characterizes a digital native company? What does management control look like in digital native companies? What role will the finance function play in facilitating the use of information flows in digital native companies?

These questions are highly relevant in today's business climate. Digital innovation, and the use of it, develops at a rapid pace and many businesses are today founded due to digital innovation. To understand and manage the management control system in these businesses, it is necessary to challenge traditional conceptions about what features are characteristic of an organization, by establishing nuanced research with organizational contexts of this nature in mind. The need to do so grows as the number of digital native companies continues to grow. We argue that the digital native companies and the way that they work with information technology represents a shift in the research on management control.

To expand the research domain for management control, a single-case study is conducted on a digital native case company within the telecommunications industry. The management control system will be studied using Simons levers of control (Simons, 1995), which is then nuanced and developed to fit the specific features of a digital native company.

The study has found that digital native companies face different challenges, with regard to digital innovation, then digital immigrant companies. Employees of digital native companies use information technology extensively and less formally. This leads to overloaded information flows and difficulties in making meaningful use of the data that the information systems generate. The study identifies that digital native companies need a facilitator of the use of the information flows and that the finance function might be a suitable candidate for such a task.

The next section describes the conceptual background and research focus. This is then followed by a description of the chosen method of the study. Succeeding the chosen method

is display of the empirics, which have been analyzed through Simons (1995) levers of control. The last part of this paper contains the analysis, where our contributions are presented in detail. At the end is a section that summarizes our contributions, along with limitations and suggestions for future research.

2. Conceptual background and research focus

In this chapter, we will begin by defining digitalization, outlining why management control should be distinguished in relation to "digital native" and "digital immigrant" companies and outline the study's intended contribution and research question in 2.1. Then we will move on to briefly explain the emergence of management control and motivate our choice of theoretical framework in 2.2. After which, the existing literature within management control and digitalization will be reviewed in 2.3.

2.1 Management control systems and digitalization in digital immigrant and digital native companies

2.1.1 Defining digitalization

"Digitization" and "digitalization" are two concepts that are commonly used interchangeably by a wide range of academics. The two terms are associated but yet different. Digitization is defined as the material process of converting analog streams of information into digital means. Digitalization is referred to as "the way in which many domains of social life are restructured around digital communication and media infrastructures" (Brennen and Kreiss, 2016).

Brennen and Kreiss (2016) definition of digitalization is in essence based on social life, how people interact. When these interactions go from being conducted through less digital technologies, such as snail mail and telephone calls, to being conducted through digital technologies, such as email, speed-texting and social media, the individual becomes more connected by information technologies. Furthermore, as digitalization emphasizes interaction, management control is needed in order to control those interactions.

This study use Brennen and Kreiss (2016) definition of digitalization. However, as the concept of digitalization assumes a transition from less digital information technology to more digital information technology, the term has limited implications for the digital native

company. This is a crucial distinction to make and is an important aspect of our contribution to the domain of management control and information technologies.

2.1.2 Defining the digital native company

There are many companies that use extensive information technologies from birth, without undergoing a process that fits the definition of digitalization. Yet there is no common definition for them. It is therefore our intention to elevate the notion of digital natives and digital immigrants to an organizational level. The definition of a "digital native company" that is presented in this thesis share many features and characteristics with the definition that is presented by Myers, Sundaram and Vodanovich (2010). Research about the use of information technology is connected to the the notions of digital natives and digital immigrants. By applying these definitions on an organizational level, the knowledge about digital natives and digital immigrants is expected to have implications for the definitions of digital native companies and digital immigrant companies, thus contributing with valuable insights to the use of management control systems in digital native companies.

Born digital

One important distinction between digital native companies and digital immigrant companies is the notion that digital native companies are born into the digital world. This is similar to what Prensky (2001) attributes the digital native. The digital world is characterized by ubiquitous information systems (UIS) with high connectivity, regardless of geographic locations of the user. The UIS is embedded in the environment in which the digital native company function. This is often materialized by ERP systems, speed chat functions and social media. The digital native company would not necessarily have to pursuit a mission or business plan that is facilitated by digital innovation itself. However, the way in which the company operates would have to be digital from the founding of the company. Contrarily, the digital immigrant company would begin its operations outside the digital world, in order to adopt to it afterwards. This process is more akin to the definition of digitalization.

Research further suggests that digital natives are born in different time intervals. Palfrey and Gasser (2008) and Palfrey et al. (2009) argue that digital natives is a subset of the millennials, as a reaction to growing up in a networked world with extensive use of ubiquitous information systems. Applying this definition to the digital native company, this would mean that the first digital native companies are born with digital innovation as the digital world

evolves. The internet-boom of the late 90s and early 00s would represent the point in time where digital native companies first see the light of day.

Connectivity

In 2004 McMahon & Pospisil (2005) conducted a survey with 200 000 US students. The result suggest that digital natives not only interact differently with information technology. Their lives are also modeled by information technology, in the sense that they are highly connected, social and experiential. Information technology is used in both private and professional settings for collaboration and decision making, amongst other purposes. Leung (2003) also suggest that digital natives are more comfortable with peer-to-peer collaboration than digital immigrants. Myers, Sundaram and Vodanovich (2010) suggests that digital natives would also be keener to use speed texting as opposed to emails and phone calls, which is more preferred by digital immigrants.

When applying the features of connectivity adherent to digital natives, on an organizational level, this would implicate that digital native companies are more digitally integrated and also shape their operations and business ideas to utilize information technology. They are more inclined to use speed texting instead of email and phone calls as well as engaging in peer-to-peer collaboration. This would also imply that the digital native company is more comfortable in a flatter organization with less hierarchy. On the contrary, a digital immigrant company would regard information technology as a mean of carrying out conventional tasks, rather than altering the overall function. Communication would most likely be more formal and less liberal.

Content

Some types of information technology are popular amongst both digital natives and digital immigrants. Prensky (2001) suggest that blogging is one such phenomenon that is growing in both groups. Digital immigrants tend to use blogs for more intellectual purposes, whereas digital natives use blogs as a platform for sharing personal experiences. Digital natives also seem to be more of a creator of online content, whereas digital immigrants are more likely to be users of the technology without contributing to the content to an equally high extent (Huffaker, 2004).

When applying the above features to digital native companies, it is implicated that a digital native company is keener to create digital content than a digital immigrant company, even though they might use the same information technology. The definition also implies that digital native companies are less restricted in the manner that they share information. Communication on digital platforms is less formal and more frequent.

Concluding remarks

Previous research on digital natives and digital immigrants suggests that the distinction between digital natives and digital immigrants is regarded as two sets of different groups. However, as Myers, Sundaram and Vodanovich (2010) argue, the distinction between the two is best described as a continuum. Different entities can bear traits adherent to digital native companies in one regard but be more akin to the definition of a digital immigrant company in another matter. According to Myers, Sundaram and Vodanovich (2010), digital immigrants can also shift and adopt new behaviors that would resemble a digital native. This definition also applies for the digital immigrant company. It can adopt to new characteristics and converge towards being more resembling to the definition of a digital native company. A process that would be more in line with the definition of digitalization.

2.1.3 Purpose of study and intended contribution

In essence, there is an identified gap in existing literature on management control and digitalization regarding the notion of digital natives, on an organizational level. This study aims to make a contribution in the sense that we want to coin the term “digital native” on an organizational level, as we argue that this organizational setting will bear implications for design and the use of management control systems. In other words, we want to look into the characteristics of a digital native company as well as to analyze what management control will look like in a digital native company.

We will further look into what role the finance function will have in the digital native company. Our hypothesis is that as digital innovation and information technology becomes a part of the organizations DNA, the role of the finance function will shift and require them and other business areas to develop new skill sets and ways of working.

2.1.4 Research question

With this the above background, the study aims to answer the following research question:

What characterizes a digital native company? What does management control look like in digital native companies? What role will the finance function play in facilitating the use of information flows in digital native companies?

2.2 Theoretical Framework

2.2.1 Management control

The emergence of management control

Strauß and Zecher (2012) reviewed the existing literature on management control systems and identified that the emergence of management control systems in academic literature is traced back to a few people and a few universities. In particular, Harvard Business School (HBS) and mainly Ross Walker and Robert Anthony that were among the most influential actors in transforming accounting to management control (Zeff, 2008). This transformation entails the shift from satisfying the needs of the accounting profession to satisfying the information needs of managers in order to foster motivation and rational behavior within the organization (Zaleznik, 2005). This shift resulted in the fact that HBS ran courses for the US National Defense during 1941-1945, with the aim of optimizing the management of scarce resources. This is considered to be the first time that modern form management control was used (Strauß and Zecher, 2012). In conjunction with this, the MBA program at HBS also started to adapt its management accounting course and in 1965, Anthony held a course with the same title as his book "Planning and Control Systems" (Strauß and Zecher, 2012). By the following year, the course was renamed "Management Control Systems" and this was the first time that the term was used in the academic world (Otley, 1994). The course book was the starting point of modern MCS discussion (Machin, 1983; Otley, 1995; Herath, 2007). Anthony (p.17, 1965) defined management control as "the process by which managers assure that resources are and used effectively and efficiently in the accomplishment of the organization's objectives". Anthony (1965) also divided the MCS process into strategic planning, management control and operational control. Anthony's work was important for the development of MCS research, however other researchers claimed that it put too much emphasis on financial controls (Emmanuel et al., 1990; Otley et al., 1995; Merchant and Otley, 2007). Nevertheless, this was the first phase of the development of management

control (Strauß and Zecher, 2012), on which the current domain of management control stems from. Below follows a review of that research domain.

Review of different management control frameworks

The main purpose of the review of existing management control frameworks that Strauß and Zecher (2012) conducted was to rank management control frameworks. This was done on the basis of a conducted survey and syllabus of textbook/article explaining the framework. The ranking according to the exploratory e-mail survey ranked management control frameworks with scores. The frameworks received three points each time their textbook was ranked first, two points each time that they were ranked second and one point each time that they were ranked third. The respondents consistently ranked three frameworks as the most relevant, namely: Merchant and Van der Stede (2003); Anthony and Govindarajan (2007) and Simons (1995). The difference between these top three frameworks and the rest of the explored frameworks is significant according to Strauß and Zecher (2012). The review done by Strauß and Zecher (2012) was thorough, which is why only these articles will be considered in more detail when researching management control in this thesis. The reasons emphasized by respondents to the survey for choosing these three frameworks was that they were considered to have a "broad", "holistic" and "in-depth" coverage. Other management control frameworks were considered to put too much emphasis on accounting and thereby not understanding the full picture (Strauß and Zecher, 2012). Below is a short overview of the top three ranked management control frameworks.

The Merchant and Van der Stede (2003) framework

The Merchant and Van der Stede (2003) framework, which was ranked first in Strauß and Zecher's (2012) review, is based on controls that include results, actions, personnel and culture (Merchant and Van der Stede, 2003). The main issues identified that the framework wants to facilitate are personnel limitations, motivational problems and lack of direction (Strauß and Zecher, 2012). In essence, the overall objective of control in the framework is human behavior. Human behavior is considered important to control in order to reach the set objectives of the organization. The framework essentially follows a command and control understanding of management control (Strauß and Zecher, 2012).

The Anthony and Govindarajan (2007) framework

The Anthony and Govindarajan (2007) framework that was ranked second in Strauß and Zecher's (2012) review is based on the work of Anthony (1965). Respondents emphasized that Anthony and Govindarajan (2007) was a credible choice due to Anthony's long experience within the field of management control (Strauß and Zecher, 2012). The framework uses the concept from Anthony (1965) about strategy formulation, management control and task control. Anthony and Govindarajan (2007) defined management control as "the process by which managers influence other members of the organization to implement the organization's strategies" (Anthony, 1965, p.17). The management control framework is similar to the framework that Merchant and Van der Stede (2003) presents, in the sense that it is a command and control understanding of management control. The framework of Anthony and Govindarajan (2007) also excludes informal control mechanisms, such as personnel or culture controls that was captured by Merchant and Van der Stede (2003).

Discussion of Simons (1995) in contrast to Merchant and Van der Stede (2003) and Anthony and Govindarajan (2007)

The preferred framework of this thesis is Simons (1995) levers of control, which was ranked third in the study of Strauß and Zecher (2012). Below is a discussion of that management control framework, in relation to Merchant and Van der Stede (2003) and Anthony and Govindarajan (2007).

Strauß and Zecher (2012) claims that Simons (1995) levers of control framework is, in contrast to Anthony and Govindarajan (2007), richer in the sense that it recognizes informal elements, even though the framework does not contain informal controls. Another advantage with the Simons (1995) framework, in comparison to both Anthony and Govindarajan (2007) and Merchant and Van der Stede (2003), is the fact that it perceives management control as "Innovation and control" rather than "Command and control" (Strauß and Zecher, 2012). Simons (1995) belief system is an example where informal aspects are taken into consideration. However, values and beliefs only become a part of the management control system when they are formalized. This could be materialized through the documentation of these values in a mission statement or document of similar nature. Anthony and Govindarajan (2007) don't consider informal controls at all. The benefits from Simons (1995) view of management control, as a concept of innovation and control, is that the feedback mechanism

between goals, actions and business strategy are integrated and thus allowing a bottom-up as well as top-down perspective of management control (Strauß and Zecher, 2012).

Informal controls, explicitly integrated	*Merchant and Van der Stede (2003)* Action controls, results controls, personnel controls and cultural controls	*Simons (1995)* Belief systems, interactive control systems, boundary systems and diagnostic controls systems
Informal controls, not explicitly integrated	*Anthony and Govindarajan (2007)* Strategic planning, budgeting, responsibility center, report actual vs. plan etc.	
	Command and control	**Innovation and control**

Table 1: Comparison of Merchant and Van der Stede (2003), Anthony and Govindarajan (2007) and Simons (1995) frameworks (Strauß and Zecher, 2012).

Simons (1995) describes management control systems as "the formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities". In essence, Simons (1995) focuses on informational issues, such as how information is generated, communicated and used throughout the organization. Simons (1995) also emphasize that his framework focuses on four central areas, which needs to be explained in greater detail. The first area concerns the formal routines and procedures (e.g. planning and monitoring systems). This area also represents a fundamental approach of Anthony and Govindarajan (2007) (Strauß and Zecher, 2012). The second area relates to informational issues, as briefly discussed above. These aspects are not as prominent in the management control frameworks of Anthony and Govindarajan (2007) and Merchant and Van der Stede (2003). The third area concerns the fact that maintaining or altering patterns should not only be seen in the light of goal-orientation. New opportunities and innovations should also be utilized in order to capture emergent strategies (Simons, 1995). The fourth area concern Simons (1995) focus on top managers' use of management control systems. By doing so, he excludes the use and influence of management control systems by lower level employees. This aspect has been criticized by other academics (Ferreira and Otley, 2005; Langfield-Smith, 1997).

In conclusion, Anthony and Govindarajan (2007) and Merchant and Van der Stede (2003) are similar in the sense that they both apply the "command and control" management control perspective. However, Merchant and Van der Stede (2003) provides a broader understanding of management control. Simons (1995) provides a broader understanding of management control than Anthony and Govindarajan (2007) but is still slightly narrower than Merchant and Van der Stede (2003). Still, Simons (1995) best captures the information aspect of management control, amongst these management control frameworks. In this study, where management control and information technology will be explored in more detail, this aspect is considered important.

2.2.2 Motivation behind choice of theoretical framework

In order to reach the objective of answering the research question mentioned in the introduction, Simons (1995) four levers of control will be used as a theoretical framework. As mentioned above, Simons four levers of control is commonly considered useful and credible (Strauß and Zecher, 2012). It also focuses on formal control, which is necessary when looking at what role the finance function will play in facilitating the use of information flows. It is implied that an organization that uses a finance function as part of their management control system requires a larger scale organization, which is more likely to use formal control systems extensively.

Further reasoning behind the choice of using Simons (1995) levers of control is tied to the fact that the definition of a digital native company is different to the digital immigrant company in terms of connectivity and content. In order to answer the question with regard to what management control look like in digital native companies, the framework must capture aspects of connectivity and information content. As mentioned in the previous section, Simons (1995) four levers of control captures the information aspect of management control. With regard to the aspect of information content, the use of Simons (1995) will also allow for analyzing innovation that will likely stem from the digital native company's way of producing content in a way that differs from similar processes in the digital immigrant company. As mentioned, Simons (1995) perceives management control in the sense of "Innovation and control" rather than "Command and control" (Strauß and Zecher, 2012). This is also important when analyzing a digital native company, as these urge to be in the forefront of technology. As Simons (1995) captures central features, where the definition of a digital native company stands out to the digital immigrant company, the argument is made

that this is a good management control framework to expand on and develop new insights from. The following section includes further explanation on what Simons (1995) management control framework looks like.

2.2.3 Simons levers of control

While it is important for organizations to encourage creativity and innovation, a control system needs to be in place to ensure that the organization is operating in a manner consistent with the values and aims of the organizations. Simon's levers of control explain how an elaborate management control system consists of four control levers, each having a distinct purpose for management in order to harness employee creativity and innovation. Belief systems are supposed to empower and encourage employees to search for new opportunities as well as to communicate the core values of the organization and get the employees to commit to the organizational purpose. Boundary systems are put in place in order to define the rules of the game and state risks that should be avoided. Diagnostic controls are tools for managers to make sure that the employees achieve their goals, and simultaneously the organizational goals, in an efficient and effective manner. Interactive controls have the purpose to focus on strategic uncertainties and handle those interactively. As market conditions change, the organization needs to be able to respond quickly. Other, less uncertain matters, can be sufficiently handled by the other levers. Lastly, Simons (1995) describe a fifth lever called the internal control system. The purpose of the fifth lever is to safeguard the other assets from misappropriation, to ensure reliable accounting records. This lever is especially critical to the safeguarding of the diagnostic systems. (Simons, 1995)

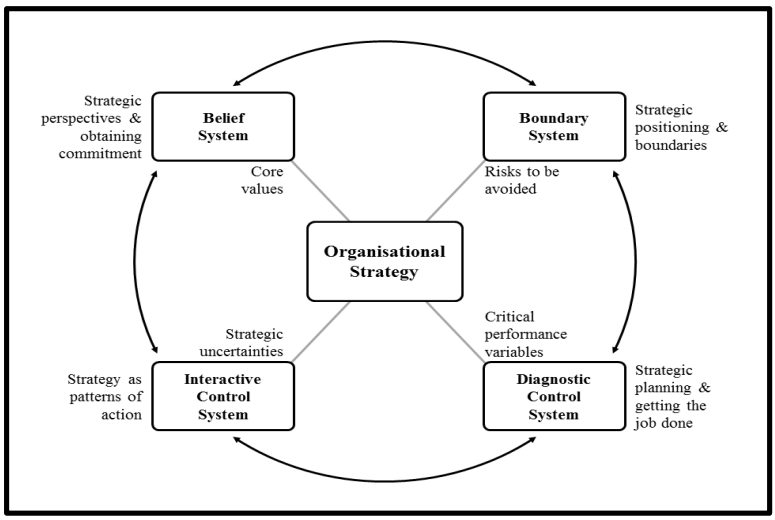

Figure 1: Overview of Simons levers of control (Simons, 1995).

At the core of the analysis is how the company positions itself in comparison to competitors. The framework has "soft" and "hard" levers. The "soft" being positive and inspirational (Belief and Interactive) and the "hard" emphasizing more control and constraints (Boundary and Diagnostic). The idea is that the "soft" levers should foster intrinsic motivation whereas the "hard" levers should foster extrinsic motivation. The different levers should complement each other in order to form an effective management control system. Major tensions identified from the Simons control framework are: (1) unlimited opportunity vs. limited attention, (2) intended vs. emergent strategy and (3) self-interest vs. desire to contribute (Simons, 1995). The first tension is highly relevant in connection to information technology as it provides organizations with large amounts of data (opportunity), but still all data cannot be captured in a relevant manner (limitation).

Belief system - Empower and expand opportunity seeking	Together, Belief and Boundary systems frame the strategic domain for the organization	**Boundary system** - Set the rules of the competition
Interactive control system - Expand and guide the opportunity seeking that may result in emergence of new strategies	Together, Interactive and diagnostic controls systems guide the implementation and formulation of strategies	**Diagnostic control system** - Focus the attention on the implementation of intended strategies

Table 2: Overview of the interplay of the four levers (Simons, 1995).

As no research has yet put digital innovation and information technology in the context of the definition of a digital native company, most research on management control and digital innovation emphasize digitalization. As already mentioned, this is a notion that does not apply to the digital native company. It is however our suspicion that important lessons can be learned from the existing literature on digitalization, as the technology that research on digitalization targets is still the same. The following section depicts the current research on management control systems and digitalization.

2.3 Management control systems and digitalization

2.3.1 Digitalization and control

Previous research indicates that digitalization will radically change controlling as it's known today (e.g. Zuboff, 2015; 1988; Orlikowski, 1991). Following that view, research has been

conducted that focus on tensions that arise from the emerge of digitalization. Below is a review of that research.

Control tensions arising from digitalization

Schäffer and Weber (2017) discusses digitalization and controlling by highlighting eight central challenges that organizations will face as a result of digitalization. Schäffer and Weber (2017) argue that organizations' task profile, toolbox and mindset must be adapted in order to handle these challenges effectively. The challenges that Schäffer and Weber identifies are:

- *Data management*, how is the data made relevant and reliable?
- *Self-controlling*, how can management make sure that employees can evaluate themselves but simultaneously be allowed enough empowering features?
- *Agile control*, to be able to slim down the processes within a business without losing too much control.
- *Business partnering*, to be able to use accounting knowledge for strategic thinking rather than manual labor.
- *Efficiency*, balancing efficiency and control.
- To strengthen the analytical potential of the company by the utilization of *big data*.
- *Developing new skills* for the developed controller role.
- *Maintaining the controlling mindset* by always evaluating how things are done as well as how they can be improved and changed to match the current business environment.

The challenges that Schäffer and Weber bring to attention in their article is a nice summary of many tensions that might arise in terms of controlling for different organizations, due to digitalization. Many of these tensions are central topics in other research material within the accounting and digitalization domain, as the following paragraphs describe.

Regarding *data management*, it will be crucial for organizations to invest heavily in the foundation as they need to ensure that the data used for decision-making is relevant and reliable. This challenge also relates to the study made by Quattrone (2016), who evaluates if management accounting will be wiser after having incorporated digital processes. Quattrone (2016) is sceptic towards the hypothesis that digitalization will improve the quality of decisions. He argues that digitalization might instead result in people taking the wrong decisions much more quickly than before, as it will be hard to determine what data is relevant

and reliable when faced with larger amounts of data. Consequently, if digitalization involves data management challenges, then organizations should deploy structured internal controls to manage them.

The challenge of *self-controlling* means that organizations must have effective systems in place so that employees can and want to control what they deliver themselves. This relates to the theoretical framework of Simons (1995) levers of control where the claim is that an effective management control system must have the right balance between "enabling" and "enforcing" control mechanisms. The notion of balancing enforcing and enabling features is also something that Mundy (2010), as well as Scherman et. al (2012), discusses. Both conclude that digital control systems have the ability to ease the tension between enabling and enforcing features of control, by making control more accessible.

How the increase of control is supposed to materialize is another important aspect, which is touched upon by Ouchi (1979). Ouchi argues that information systems enhance measurability of outcomes and transformation processes. This indicates that the introduction of information systems might shift the ability to control in different ways. In essence, if information systems enhance measurability in line with Ouchi (1979) this should enhance the "hard" levers in an organization. Spekle´ (2001) also argues that control might materialize differently due to digitalization. He brings to notion that information systems allow for a more profound integration of inputs when decisions are made in an organization. This is perhaps a feature that could facilitate the notion of agile control.

The challenge of *agile control* means that processes need to become slimmer, faster and integrated. Digital technologies can be great facilitators of agile control, if set up in the right way. They could free controllers and other accounting professionals to focus on more important matters. However, although digitalization can provide major efficiency gains that allows controllers to focus on more important matters, exactly where the limit of standardization and automation lies is difficult to determine. This constitute another challenge of achieving efficiency in controlling without losing control in important areas. As an example, Simons (1995) argue that interactive controls should be used for important and complex matters. Carr (2008) makes a similar argument, pushing the notion that digitalization is flattening human intelligence into artificial intelligence. Carr (2008) fears that if humans rely too heavily on computers, the ability to make- and critically analyze decisions will

decrease. This also relates to the challenge of *business partnering*, to be able to use accounting for strategic decision making, instead of manual labor (Schäffer and Weber, 2017).

Another important aspect of digitalization and control is the notion of who can exercise control. This connects to the challenge of *balancing efficiency,* by Schäffer and Weber (2017). This is illustrated by Newman (2005) and the technology power loop. Lederer, Knapp and Schott (2017) also discuss who shapes technology, as well as Carlsson-Wall and Strömsten (2018) that demonstrate how control shift between the finance function and the IT function during three different stages of digitalization. Newman (2005) discusses the effects of digitalization for accountants and control, with emphasis on ERP systems.

Newman (2005) illustrates the relation by describing the technology power loop, which argue that expertise influences technological development. Technologies then shape the control of technology and that in turn defines expertise. This results in that once a group exercises expertise, that group can influence the way technology is developed, to strengthen their own expertise in the organization and increase control even further. The technology power loop is useful in describing the dynamics of accommodating ERP, for accountants. Neglecting this area allows for other groups to take control over the management accounting domain and make ERP systems work for themselves. However, making ERPs work is more than technological expertise or social accommodation. It is an ongoing dynamic interaction between the ERP system, different departments of the organization and external groups. Accountants adjust to technologies in different ways and therefore the outcome is highly dependent on internal factors.

The idea of who shapes the technology is also mentioned by Lederer, Knapp and Schott (2017). They find that the optimization of workflows can be done bottom up in an organization. That is, the people with better understanding and knowledge of digitalization is suitable for developing the implementation of it.

Carlsson-Wall and Strömsten (2018) further develop the analysis of digitalization and control by dividing digitalization into three stages. The purpose of the study is to evaluate the ongoing power battle between the finance function and the emerging IT function, at each stage. The first phase took place primarily in 1970-1990. Mainly specific accounting tasks

were digitized within the finance function in order to keep track of accounting transactions and perform internal calculations. In this stage, the power battle between the finance function and the IT function was limited as they still had more separate responsibilities. The second phase took place mid 1990-2010 and constituted development of ERP systems that aimed to integrate accounting information with other functional systems in order achieve synergies. In this stage, the power battle between the finance function and the IT function was strong, although the role of the finance function was strengthened as CFOs were normally in charge of the ERP system. The third stage started around 2010 and is still ongoing. This includes the integration of ERP systems with robotics, artificial intelligence and customized CRM systems. One key function was to integrate accounting information with both internal and external data to create synergies and question the existing business model. The power battle here is potentially strong. However, IT is supposedly the winner here since many accounting tasks can be automated. In conclusion, it is unclear how the finance function will develop in the future. Accountants and controllers could become trusted partners in today's world of digitalization, which is also an important factor that Schäffer and Weber (2017) describe, to *strengthen the analytical potential of the company by the utilization of big data*. In such a case, the embracing of robotics and artificial intelligence will be important as a complement to decision-making. The third phase could also lead to decreased power of the finance function if they do not manage to adapt to the changes effectively, which would be an example of the challenges to *develop new skills for the new controller role*, as well as *maintaining the controlling mindset* to evaluate processes and how they should be matched to the current business environment. A future scenario could be a hybridization of the accounting function and the IT function, as will be explained in more detail in a later section.

2.3.2 Management control and decision making in the digital world

Digitalization makes it possible for firms to handle massive amounts of information, which can be used as basis for decision-making and control, but also performance evaluation through control systems. However, it must be mastered in the right way. Dechow et. al (2007) discusses the relationship between management control and information systems/technology. Key findings include the fact that information systems/technology can simultaneously constitute a challenge and resource for management control. Information systems/technology can enable organizations to effectively account for and use the right information. However, the benefits from information technology might not materialize directly and the organization might experience implementation barriers from such delay. Management control can

sometimes be considered dependent on information technology. However, as accounting metrics are key performance indicators, information technology would not be able to present its own case. Nevertheless, research is needed in this area in order to get insights into this relationship between management control and information technology. That is so that organizations are able to coordinate their increasingly complex activities in an efficient way. The interplay between accounting metrics and the development of such can be viewed as a balance of "soft" and "hard" performance evaluation metrics.

Balancing "soft" and "hard" performance evaluation metrics

The importance of being able to use information technology has also been shown by Brivot et. al. (2014). They examine performance evaluation in the context of a law firm. More specifically, they examine what factors are most important when promoting employees? One important finding is that knowledge management systems can be used effectively for lawyers to get an edge in the race for promotion. These findings are interesting as they show that billable hours are not the dominant factor for getting promoted. Knowing how to use knowledge management systems was also rewarded and considered an important factor. This relates to digitalization and management control systems as digitalization potentially could enable firms in assessing both "hard" and "soft" performance elements when evaluating employees.

Sanchez-Rodriguez (2012) supports the finding of Brivot et al. (2014) with the finding that the use of digitalization in performance monitoring does not only lead to performance measures becoming more standardized, accurate and produced in a quicker manner. Digitalization would also lead to more extensive non-financial information. In essence, if used in the right manner, digitalization can improve and effectivize management control systems. This is both from a "hard" and '"soft" performance evaluation perspective. Below follows a section about what research say with regard to the challenges of digitizing accounting information in an effective manner.

Challenges of digitalization in using accounting information effectively

As mentioned, Quattrone (2016) sheds light on the potential difficulties of digitalization for the accounting function in decision-making. He questions whether vast amounts of data will lead to better decision-making or rather just make people arrive at the wrong decisions faster? According to these findings, accounting is a tool for communication and discussion, it's not

an "answering-machine". Digitalization is believed to bring advantages in the form of transparency and predictability, but the question still remains: How do we know that we chose the right data? Quattrone (2016) suggest the idea that having access to vast amounts of data will make decision makers blind and cause them to make wrong decisions at an even faster pace. This idea relates to findings made by Payne (2014), concerning the importance of tacit knowledge and how standardized processes brought by digitalization can potentially destroy the learning process that is gained from discussions and iteration. Still, digitalization is, according to research (e.g. Zuboff, 2015; 1988; Orlikowski, 1991) an important element of possibilities. The argument could be made that this is especially true for digital native companies, as many of them base their entire business idea on digital innovations. Ignoring digital innovations will thus not be possible in all businesses. In essence, it will be a learning process for companies to discover the best use of technologies. This argument is also brought forward by Myers, Sundaram and Vodanovich (2010) who explain that digital natives use technologies with less criticism, which can lead to potential hazards. In essence, taking advantage of the benefits of technology will be important in order to stay competitive. However, it will be equally important to be critical and realize potential limitations. Also, as Revellino and Mouritsen (2015) puts forward that, in order to successfully implement digital accounting innovations, it is important to consider the organizational setting and existing knowledge within a firm. Essentially, digitalization will play a different role in different organizations. Below follows a discussion about the benefits of using digital innovation to use accounting information effectively.

Benefits of digitalization in effective use of accounting information

Sanchez-Rodriguez (2012) conducted a multiple case study where controllers from 13 major Canadian firms were interviewed with open-ended questions regarding ERP systems and management accounting. The research examines how implementation of ERP systems through computational power, relational databases, standardized transaction processes and extended charts of accounts influence management accounting. Findings show that due to improved computational power and overall standardization, data was more accurate and timely. Also, in the light of standardized transaction processes, information was more readily available and consistent across units within the firms. This is perhaps a factor that would facilitate coherence and internal consistency through the five central tensions, as presented by Otley (1999). Performance measures have also become standardized, more accurate and produced in a quicker manner. Non-financial information too, has become more extensive. In

essence, the standardization and automation of transaction processes decreased the amount of data entry done by management accountants, allowing them to undertake analyses instead. Sanchez-Rodriguez (2012) thus demonstrates that digitalization, or more specifically ERP systems, can in fact help accountants to decide what information is useful in decision making. This would then lead to a faster and more accurate approach to decision-making. Below is a section that describes how the accounting profession could shift as a consequence of digitalization.

2.3.3 The finance function in the digital world

The finance function becoming a business partner

Bhimani et. al (2014) describe that a fundamental shift in the accounting function is taking place. This would be a result of extensive technological developments of data and technology. Accounting information deployed through advanced IT- and business analytics tools are used in organizations for enhanced decision making at a faster pace. They also argue that KPIs, objectives and incentives need to be revised in order to be congruent with new organizational responsibility and reward structures. These new accounting systems, coupled with new information channels and metrics, could potentially lead to a changing role of the accountant. These imposed changes can also be a consequence of new external partners and service providers brought by digitalization, which require the organization to change structures and processes going forward. Thus, the organization will face new challenges. Important organizational considerations in the future will be: Business and function vision, delivery of services, information system planning and design and governance. In essence, it is suggested that digitalization pose disruptive elements that will form new challenges for the finance function, and the organization in general, going forward. Bhimani (2014) clarifies that the role of accountants is shifting significantly. In the light of digitalization and big data, understanding the business is however still essential. Accountants understands the organization in relation to financial flows as well as operations. Accountants have a pre-existing advantage here, enabling them to be in the forefront of implementation and taking on a role more akin to that of a business partner. The view of the development of the accounting function into a business partner role is supported by several research articles (e.g. Favaro, 2001; Järvenpää, 2007; Desai, 2008). Bucher and Strauss' (1961) also suggest that the definition of professions might shift as a consequence of: The sense of mission, work activities, methodology and techniques, clients, colleagueship, interests and associations as

well as spurious unity and public relations. The following section highlights the challenges associated with the re-definition of the accounting profession.

Digitalization challenges for the accounting function

Payne (2014) continues to discuss the topics brought forward by Bhimani et. al (2014), but takes on an opposed view on various focal points. Firstly, Payne (2014) claims that connecting strategy, structure and accounting systems presents a challenge as strategies are often emergent. Even when they are explicitly stated, they are not expressed in a way that supports system development. This point relates to Simons (1995) that identified intended strategy vs. emergent strategy as a major tension in Simons (1995) levers of control. He claims that these strategies should be combined, to emphasize focus on the realized strategy. Secondly, Payne (2014) claims that it is important to engage in new technologies, big data and analytics. In conclusion, digitalization should be a field of iteration, experimentation and learning rather than for making big decisions. He points out the fact that it should be difficult to make the right decisions without tacit knowledge, which is founded by a trial and error process. Another difficulty here is that digitalization might lead to less visible processes and thereby the loss of tacit knowledge, which otherwise would have been generated. This second point also relates to Simons (1995), in the sense that he claims that information and learning generated by the interactive control system can be embedded in strategies. The interactive control system is in that sense a tool for influencing experimentation and opportunity-seeking behavior, which can in effect result in emergent strategies. Thirdly, digitalization can lead to outsourcing, offshoring and new business models. This would pose a challenge in connecting the various parts of the business. As the finance function moves towards a "business partnering role" it is essential to understand the business and this might be difficult in the new setting of an outsourced accounting function. Tacit knowledge is considered important in order to make the most out of big data and analytics. Lastly, Payne (2014) argues that digitalization, in its automated form, will make processes less visible. In essence, the digital processes are likely to generate big issues if they default, due to the lack of tacit knowledge. Members of the staff might not know who to talk to, how to fix it or how to do things manually. Still, big data and analytics provide opportunities to better understand the business and its customers, as demonstrated by Payne (2014). However, digitalization will still need careful consideration. Although the accounting function is required to develop new skill sets in order to support the "business partnering role", the "old" skills sets, often materialized as

tacit knowledge, will play an important role. To develop the role of the accounting function, the following section describes it in relation to the IT-function.

Hybridization of the accounting- and IT function

Carlsson-Wall and Strömsten (2018) examine the power battle between the accounting function and the IT function, during three different stages of digitalization. They claim that the accounting function might potentially have a decrease in power during the third stage, as the IT function gains more control as digitalization progresses. Caglio (2003) also argue that a future scenario would be that the accounting function and the IT function hybridize, as digitalization progresses. Caglio (2003) examines this phenomenon by analyzing how the adaption to ERP systems challenges and changes the definition of expertise and the overall role of accountants within organizations. In turn, this might lead to new, hybrid positions. The study is based on the company Pharmacom and its accounting people and other workers. The findings from the study, although limited by scope, demonstrate an optimistic mindset for the accounting profession going forward. ERP systems can be a powerful tool for accountants, providing them with structuration and standardized processes. This would allow them to focus on more meaningful activities, thereby enabling them to increase their standing and legitimacy amongst other stakeholders of the firm. However, the result of the implementation of ERP systems would also be that the boundaries of activities within organizations are blurring. This will, in effect, lead to a reallocation of activities and a redefinition of traditional organizational positions. This argumentation is also in line with Bucher and Strauss (1961), who view professions as segments in constant movement.

Dechow et al. (2003) further claim that accounting in today's organizations is dependent on IT, as IT create the platforms for accounting. However, accountants can proactively strengthen their future position by engaging in digitalization, in this case in the implementation of ERP systems, by making it work for themselves. The outcome would however still be hybridization of accountants and other functions. This cross-hybridization between accounting people and IT people seem to be inevitable as digitalization progresses to involve automation, robotics and more advanced systems. Technology enables different groups to carry out tasks that formerly could only be carried out by accountants. This argument is further strengthened by Armstrong (1985), who claims that new technologies tends to question what the domain of accounting should actually contain. The argument is made that IT could, to some extent, be a domain that should be included in the accounting

domain. This intersection is one important focal point that this thesis aims to investigate. The next section discusses our chosen method of how the study behind the contribution is designed and structured.

3. Method

In this section, the method and reasoning behind the thesis is described. In section 3.1 the research design is explained. In 3.2 the motivation for the chosen case company and data collection will be explained. Finally, in section 3.3 the data analysis process will be explained further.

3.1 Research design

In order to analyze how digitalization is affecting the management control system of a digital native company, the thesis is built on a qualitative single case study with semi-structured interviews.

Research on digitalization is often centered around the idea that digitalization is a disruptive force in any businesses (e.g. Zuboff, 2015; 1988; Orlikowski, 1991). No research has yet to investigate the role of digitalization in a business that is fundamentally born into the digital landscape. The lack of research suggest that this thesis constitutes a new topic and thus requires a broad scope of research to begin with. Entering this research topic will naturally lead to new findings, which will shape the direction of this research, in an abductive process (Bryman and Bell, 2013; Dubois and Gadde, 2002), where the research is focused towards the more significant findings, as the research work proceeds and theory is created from processed data (Langley, 1999). This way of conducting the research is in line with what is presented by (Edmondson & McManus, 2007), who suggest that a "nascent" state of prior theory and research requires a more qualitative and open-ended approach when fitting method to the field of research. This is convenient due to the risk of existing theory being insufficient (Eisenhardt, 1989).

3.1.1 Single-case study

By conducting a single-case study the aim is to provide even more depth to the research, in line with Dyer & Wilkins (1991) and Siggelkow (2007). We expect a single case study to provide more detailed information about the organizational processes within the business, as

we would get more empirical material on the same organization (Yin, 2014). The idea of getting more empirical material on the same organization also provides the opportunity to redirect the research during the abductive research process. Conducting a comparative case study would also bear the risk of duplicating research that has already been made, if the comparative research object was to be a digital immigrant company. This is due to the fact that much research has already been made on business with digital immigrant company traits.

3.1.2 Research at an organizational level

The research question aims to investigate the characteristics of a digital native company and investigate what management control will look like in these companies. Also, the role of the finance function in facilitating the use of information flows in digital native companies, where information technology has been around from the start, will be investigated. As implied by the research question, the research is made from the viewpoint of the organization. This is why our research will be focusing on the factors at play on an organizational level, although connections to other levels might be made, as a consequence of them having an impact on the organization.

3.1.3 Compatibility with theoretical framework

The theoretical framework consists of Simons four levers of control (Simons, 1995). The framework is designed to display characteristics of the formal management control system in a business, which is why it's a preferred method theory when analyzing management control systems from an organizational vantage point.

Simons (1995) four levers of control is also a preferred method theory due to its explanatory qualities. The ability to describe the management control system of an organization in a structured manner underpins the abductive research method, in structuring the findings, for further theorization.

3.2 Data collection

3.2.1 Selection of case company and departments

The case company TeleCo is a medium sized telecom company, operating in Sweden. The company was founded in 2002, in the aftermath of the IT-bubble and the millennial shift. Essentially, the company is born within the digital era and its services are dependent on

digital technologies. Therefore, it is our belief that a single case study on TeleCo will contribute to the domain of accounting and digitalization, exploring differences between a digital native company and a digital immigrant company regarding digitalization and implications for the finance function and management control systems. In essence, it is our belief that TeleCo is a suitable case company for our intended research area and additionally, a contributing factor to our choice was of course the fact that we could get good access to the case company. The departments that were chosen is believed to illustrate all aspects of the management control system, from the view of the employees setting it up and from the view of employees that are affected by it. Together these interviewees illustrate a comprehensive picture of TeleCo organization, of approximately 175 employees. The size of TeleCo and the maturity of the organization are factors that allows for an analyze on an organizational level and with a focus on formal control systems, which can be found through interviews as well as internal documents. Simons (1995) four levers of control is a preferred method theory due to this notion.

3.2.2 Primary data - Interviews

In order to collect data to the study, we conducted 15 interviews with TeleCo employees within four functions, namely: Finance, human resources, IT and customer services, as we felt that these functions would cover all aspects of TeleCo's management control system. All interviews were conducted in October and November 2018 and lasted for 30-70 minutes. The interview method was a mix of face-to-face interviews and interviews over FaceTime as the headquarters of TeleCo is not in Stockholm. All interviewees were guaranteed anonymity at the start of each interview and asked if the interview could be recorded, which they all accepted. Both authors of the thesis were present during all the interviews, however one author had the role as lead interviewer and the other author took notes and asked a few questions when needed. Since, both authors were present at all the interviews, the interviews were viewed from different perspectives and this in effect will lead to enhanced objectiveness in the data analysis (Eisenhardt, 1989). The fact that one author handled the note taking also freed up brainpower for the second author to think about the answers from the interviewee and follow up with new questions, to access other dimension of the answers. The authors put the answers into theoretical contexts for the interviewee to reflect on, pointed out logical implications and problematized the answers in the light of anonymous but contradictory information about TeleCo. This way of conducting interviews was a useful way of extracting valuable knowledge outside of the interview guide through "analytical interviews" (Kreiner

& Mouritsen, 2005). The success of this way of interviewing required a substantial theoretical knowledge of the domain from the authors. The necessary theoretical knowledge was acquired prior to the interview, through the construction of a literature review.

In the beginning of the data collection process, after having reviewed the existing literature within the accounting and digitalization domain, initial general interview questions was formed. These initial interview questions in the first interviews were open-ended questions in order to get an objective initial view of the case company. This approach allowed for the collected data to shape the understanding of the case company and was thus considered a good methodological fit (Edmonson and McManus, 2007).

After having conducted five initial interviews, the interview questions were revised after having identified interesting themes and tensions. However, as the interviews were semi-structured, new questions naturally appeared during the interviews as well. The use of semi-structured interviews and the revision of interview questions as the process progresses provides a flexible data collection method. This is vital when approaching new research fields (Eisenhardt, 1989; Edmondson and McManus, 2007). The interview questions were similar for all interviewees but with some modification according to the role of the interviewee and according to the function they belonged to. A selection of interview questions that was used can be found in the appendix. In order to avoid a biased study, the authors of the study chose which departments and employees to interview for the study. A full list of the interviewed employees is disclosed in the following table.

Number	**Position**	**Interview length**	**Date**
1	CEO	68 min	2018-10-28
2	Head of customer service	30 min	2018-10-29
3	Customer service employee	51 min	2018-10-29
4	Human resources employee	32 min	2018-10-30
5	CFO	36 min	2018-10-30

6	Customer service employee	64 min	2018-11-01
7	Customer service team leader	55 min	2018-11-02
8	Head of human resources	30 min	2018-11-02
9	Head of business control	33 min	2018-11-12
10	Business control employee	39 min	2018-11-12
11	Head of accounting	32 min	2018-11-15
12	Accounting employee	34 min	2018-11-15
13	Accounting employee	40 min	2018-11-15
14	IT employee	60 min	2018-11-23
15	CEO	60 min	2018-11-24

Table 3: Interviews at TeleCo.

3.2.3 Secondary data - Internal documents

In order to strengthen the empirical findings in case studies, multiple sources of data should be used and this phenomenon is called triangulation (Dubois and Gadde, 2002). In order to facilitate the use of multiple sources of data in our study, we have complemented qualitative data from the interviews with qualitative data from internal documents such as employment guidebooks, organizational charts, KPIs, incentive programs and quantitative data from the annual report. Thereby, with the qualitative and quantitative sources, collectively getting full contextual background knowledge of TeleCo.

3.3 Data analysis

All interviews conducted were recorded and then transcribed shortly after completion. Transcriptions of the interviews allowed us to capture all relevant empirics in a consistent matter and also helped us to redesign questions as the interview process progressed and interesting themes and tensions were identified. When analyzing qualitative data, it is important to have a structured approach but still to maintain open-mindedness. In order to

have a clear structure, we chose to have Simons (1995) levers of control as theoretical framework that helped us organize our empirics. However, in terms of our analysis we did not have pre-set categories but let the data itself set them as we identified contributions, in line with (Glaser and Strauss, 1967). Creating the categories after the interviews contributed to the formulation of important tensions and topics for further analysis. The chosen categories are:

- Understanding of the digital native company
- Information flows
- Data management
- The role of the finance function in facilitating the use of information flows

The categories are chosen based on recurring statements that was presented during the interviews and are presented as subcategories of Simons (1995) four levers of control, to facilitate consistency of the theoretical framework.

4. Empirics

In this chapter, the findings from the case study will be presented. The findings have been structured according to the four levers of control (Simons, 1995). Section 4.1 will introduce the case company and the context in which the case study was performed. Section 4.2 demonstrate the empirics, with regard to information technology and Simons (1995) levers of control. Finally, Section 4.3 will discuss TeleCo's fit into the definition of a digital native company.

4.1 Description of case company and context

TeleCo is a medium sized telecom operator in Sweden that provides telecommunications services in Sweden, including: Mobile service, broadband and streaming services. The company is organized into business areas and has offices in several locations, but most business areas are located at their headquarters. Most business areas are situated in Sweden. However, the IT-function is located abroad and operates relatively independently. Nevertheless, there are a few IT employees in Sweden and other business areas are driving the IT development in the sense that they identify the technological need of their department, after which IT is asked to meet that need.

As mentioned, four business areas have been studied, namely: Finance, HR, IT and Customer Service. The finance function is responsible for financial reporting, financial performance, controlling and financial communication. The HR department is responsible for the workplace satisfaction, recruitment, goal setting and attainment as well as salaries. The IT department is responsible for developing information systems that meets the needs of the other departments and to aid in the implementation of new systems. In that sense IT can be considered a support function. The customer service takes care of TeleCo's customers and is organized into first line and second line, first line handling less complex problems and second line handling more complex problems. Customer service interacts with customers through phone, chat and emails. The finance function and the HR function is located at TeleCo's headquarters, Customer Service is mainly located at headquarters but also has employees in two of the smaller offices.

TeleCo is currently going through a lot of changes due to a recent acquisition and that means that former structures and roles are being redefined. As a result, TeleCo is using numerous digital systems and coordination is needed in order to have an effective use of these systems. When it comes to management control, TeleCo is currently deploying a strong financial focus, which is demonstrated by the choice of KPIs that are currently in place and the diagnostic control is currently the most developed lever. Below is a presentation of TeleCo's empirics, also with regard to Simons (1995) levers of control.

4.2 The use of Simons levers of control at TeleCo

4.2.1 Digital environment and development at TeleCo

The TeleCo employees are not resistant to change or digital innovations. They view digital technology as a productive work tool, rather than a competing element. TeleCo, as an organization, also value digital technology. It allows for smoother and more cost-efficient operations. As a result, TeleCo works extensively with digital systems and these play an important role in many internal and external processes. However, TeleCo do not consider themselves to be at the forefront of digitalization in comparison to competitors.

"Not in the forefront unfortunately, I wish that we could have spent more time on this before."

- Head of IT

The head of IT argue that other important projects has been prioritized over digital development. However, today digital transformation is a priority, but that was not the case 2-3 years ago.

The digital technologies that TeleCo uses has developed in a manner similar to overall technological development during recent years. The head of IT recons that computers can do more today than they previously could and there are new tools at hand, such as big data. Today it is, for example, much easier to analyze huge amounts of text with digital tools and to take actionable information from this. This was not possible before. The IT department use these digital innovations to develop information systems that the other departments use. Many departments have integrated systems. IT explains that they look at many different inputs in order to accommodate several departments in the information systems.

"Front end, back end, they all have different needs but still they use the same tools. We need to be agile here and try to attend to all needs.

- Head of IT

The head of It explains that different departments often have the same interface, but that the information and tools accessible will differ from department to department. The IT department try to respect the needs of all departments. There is no solution that fits all departments, so IT tries to customize for each department. The information asymmetry that is a consequence of the fact that people and departments have different access to the systems, creates coordination challenges and can lead to misunderstandings. If someone assumes that something is one way but then it turns out to be something else, then doing assumptions can create double work. It can be challenging to translate the information along the way.

"People are in general not that aware of what other functions are doing, but in my position, I need to interact with everyone in order to get a broader picture. In some systems, it is very different what different people can access."

- Head of IT

The head of IT also claims that the issue of using, coordinating and interpreting data is not unique for TeleCo. It's an issue that other companies have as well. He argues that people

might have an instinctive way of dealing with data, but that is not always the correct way. The IT and finance department therefore provides guidance with regard to the use and interpretation of data. As mentioned, the employees at TeleCo are very keen on using the latest technology. However, as the employees do not always have an overview, they might not understand the necessary work before a new technology can be successfully implemented.

"If I asked people what they want, they would say faster horses. This is a smug statement, not a very nice one, but still true. You need to take a step back and look at the system as a whole, this is normally when I come into play, I know the system as a whole and can get a more high-level perspective"

- Head of IT

In essence, employees request the latest digital technology but might not understand what the implementation demands in terms of time and resources. An example that illustrates this phenomenon is chatbots. This is a current trend, that members of TeleCo's staff want to introduce chatbots into the ecosystem so that these can perform matters for customers. While the idea of chatbots is valid and should decrease customer service errands, the head of IT emphasize the amount work that has to happen before the chatbot can have a meaningful purpose.

4.2.2 Belief system

TeleCo's primary core value is to provide life quality in the digital world and they want their employees to set high goals for both personal and professional development, in which they have high confidence in their employees and that they will reach their full potential. This is stated on the front page of TeleCo's Guidebook for employees. TeleCo expresses the need for a proper belief systems, but also admit that there are challenges to implementing such a system. Especially after the recent merger that TeleCo has gone through.

"To change the logo is quite easy, but it's another story to facilitate the new meaning of that logo throughout the organization and their processes of communication."

- CEO

Great ambitions without proper follow up

Belief systems should be in place to communicate the company's vision and values. It's a tool to be used throughout the organization on how individuals should behave, in both internal and external interactions, to facilitate comprehensive organizational purposes. When discussing these factors with TeleCo's employees it was identified that TeleCo have three catchwords that are supposed to guide employee behavior and decision making. These were: Honest, personal and reliable. Although these catchwords were explicitly stated and employees were made aware of them, it seems as though the meaning of these catchwords and how they should be incorporated into daily operations had not been made clear for the majority of the employees. One staff member from the HR department expressed the following when discussing these catchwords:

"If I could decide, I would put more emphasis on the catchwords and let the employees express what they mean to them personally. Because right now it's not defined what we mean when we say "reliable" for instance.

- Employee of the HR department

In order for employees to feel motivated and encouraged at work, TeleCo aims to set up an extensive feedback and support system. Employees set and follow up on goals with their supervisor. If employees have feedback, it can be raised to their immediate supervisor or through HR. However, the empirics also illustrate that although the aim is ambitious in this regard, it is often suppressed by other pressing matters. If supervisors have a lot on their plate they might not prioritize feedback meetings and when employees raise concerns to their supervisors it might not reach all the way to top management. Most feedback is currently communicated face-to-face. However, TeleCo aims to increase the amount of digital communication and employees expect this to have a positive impact on feedback systems as these would be less time consuming.

"Goal spiders"

An initiative that aims to outline the organizational purpose are the "goal spiders". They outline goals for different departments and the organization as a whole. These are posted on various walls throughout the offices and on the intranet of TeleCo. All employees seem to be aware of the "goal spiders", some even claim that they are everywhere. However, similarly to

the catchwords and the feedback and support systems, it seems as if the meaning and implementation of the "goal spiders" are not clearly communicated.

"The goal spiders are supposed to communicate the organizational and departmental goals, however similarly to the overall work with goals we have not managed to fully work with them due to time-constraint."

- Employee of the HR department

Great place to work

Another initiative that TeleCo engaged in, in order to strengthen the belief system and company culture, is "Great Place to work". This is an initiative that TeleCo pursues in cooperation with the company Great Place to work, which operates world-wide and aims to build a better community by supporting organizations in developing their workplace. The initiative aims to measure and compare perceived workplace satisfaction through an employee survey establishing a so called "Trust Index". Top managers also have to conduct a "Culture Audit", stating what TeleCo is doing today to improve workplace satisfaction. After the "Trust Index" and "Culture Audit" has been completed, Great Place to work will look over the responses from both top management and employees to identify and analyze deviations. Following that review, Great Place to work will support top management in developing an action plan for the coming year in order to improve the workplace. As part of this initiative, TeleCo is also competing with other companies for being the greatest place to work, which in effect can be an effective tool for employer branding. The initiative was initially communicated both digitally (through the internal network and through emails) and analogically as it was presented in meetings. However, the process also relies on digital systems, as the employee surveys and the work that top management conducts on behalf of the initiative is through digital tools and channels.

The head of HR also explains that HR holds the primary responsibility for this initiative and that it is a long-term collaboration that is underway for four years. TeleCo started the collaboration in the beginning of 2018 and the employee survey was conducted in the spring. Top management has recently defined an action plan, addressing the challenges that TeleCo needs to focus on for the coming year. HR explains that there are currently fairly large deviations with regard to how top management and other employees perceives the current

state of progress. However, the head of HR continues to state that it is natural as the top management has access to more information than other employees.

"Currently there are large deviations from how top management and other employees perceive that TeleCo is working with workplace improvements, but this is natural considering that top management has access to more information."

- Employee of the HR department

Building workplace relationships and motivation

The empirics also illustrate that TeleCo arranges social and educational gatherings for their employees, in order to foster a collaborative work environment where employees enjoy going to work. Also, as a part of TeleCo's wellness program, employees are encouraged to work out together and participate in sports activities arranged by TeleCo. Some of the employees has also taken part in TeleCo's voluntary wellness challenge, where participants receive a fitness bracelet that monitors physical activity. Employees can get extra vacation days for attaining predetermined levels of physical activity. The employees express that they value these initiatives as it is important for them to have good workplace relationships as well as maintaining their health, due to the amount of time they spend at work.

"Fostering a great work environment through social events and encouraging exercising is really important, at the end of the day our health is the most important thing and work constitutes a large chunk of our days."

- Customer service employee

4.2.3 Boundary systems

The boundary system is a lever of control that has the power to refrain organizations from certain behavior and business conduct (Simons, 1995). When conducting the interviews at TeleCo and asking open-ended questions about management control, hardly any interviewee talked about control mechanisms with features adherent to the boundary systems. It is therefore reasonable to assume that boundary systems at TeleCo is one of the weaker and less prominent parts of TeleCo's management control system. However, as the interviews proceeded, we found that TeleCo has some elements of boundary systems, even though it wasn't at the top of the interviewees' minds when answering the open-ended questions. The

staff handbook also suggests that the boundary system is articulated there, even though most interviewees seem to have a vague idea about what it contains.

External laws and regulations

The outer limit of the diagnostic system consists of law and regulations. The CEO describes the comprehensive regulations that follows from being a publicly traded company.

"We have demands since we are publicly traded. IFRS, accounting standards. We have to follow certain norms"

- CEO

The fact that TeleCo is publicly traded also means that the financial results cannot be reported to the staff until the external reports have been publicized. According to the finance department, this is a factor that would emphasize the importance of non-financial communication.

"As a publicly traded business we cannot talk too much about what revenues we should reach or EBITDA. We can't talk in those terms to our staff. We have to try to, with other means, explain why we need to work in a certain way."

- CFO

From the finance department, it is further understood that the digitalization puts certain demands on the reporting, as law hasn't caught up with the digital development. One of the finance employees describes how the finance staff has to be careful to store all physical journals to comply with law, even though all original journals are scanned and stored digitally.

"We have to be careful to store the original journals, even though we also store them digitally"

- Employee of the finance department

Another aspect of laws and regulations comes from GDPR, which put restrictions on how to use customer information and communication. One team leader of customer service expressed the following.

"There has been changes since the arrival of GDPR, we had to abandon Skype for example. It is not adopted to GDPR, so we had to start using Microsoft Teams instead."

- Customer service employee

According to the team leader, the two systems are quite similar, but it was still a large change for the entire organization. Another member of the customer service staff explains that regulation also hinders digitalization by banning customer service from exercising remote control over customer computers, even with customer consent.

Besides the means of communication, some functions have boundaries regarding the content of communication. The sales function tends to work with boundary systems, materialized by sales scripts.

Personal conduct

Another aspect of the boundary systems at TeleCo, is the demands on social conduct towards both fellow co-workers and other stakeholders. The CEO talks about the usage of internet for instance.

"People have access to internet and other tools, we put demands on how you use those. If you spread hate messages, we can capture that"

- CEO

The staff handbook conveys the same guiding principles. In the introduction of the chapter about TeleCo's work environment, the following quote was found:

"We have policies and routines that describe our goals and how we conduct ourselves in relation to all important areas of work environment, such as alcohol and drugs, offensive discrimination, sexual harassment, accidents, rehabilitation etc."

The staff handbook can be found by all employees at TeleCo's intranet, although many employees claim that this is something that most people never read. The overlaying principles is said to be carried mainly through organizational culture.

"Most aspects of personal conduct are inherited within the organization and transferred through our corporate culture, but you can use the staff handbook to control certain details. Mostly they concern pure facts about employment contracts and such."

- Customer service employee

4.2.4 Diagnostic controls

The diagnostic controls are the most developed control lever of TeleCo's management control system. All departments of TeleCo have diagnostic controls in place to track the progress of that department. Some departments, such as customer service and sales, also have explicit diagnostic controls to track the progress of individuals. In other departments, the individual progress is not as easy to measure.

Top down process forming diagnostic controls

The process of developing and maintaining the diagnostic controls at TeleCo starts and ends with top management. Top management, where most departments are represented, have regular meetings where they approve the budget and targets for the overall organization, as well as the different departments. In essence, each department will be handed a budget and targets from top management, but thereafter it is up to each department to explore and decide how to work with their preset budget and targets. The individual function is expected to break down these measures into more granular value drivers, if necessary.

"Top management sets the overall organizational goals and then each department are responsible for breaking these down."

- CFO

Budget as reference point for diagnostic controls

As mentioned, top management approves the budget and sets targets but the CFO, along with the head of business control and another business control employees, are the ones forming the budget in the first place. They also help different middle managers to break down their budgets into suitable value drivers, as well as implementing those into their function. They act as a support function for the different departments. Departments and individuals can give feedback to the targets they receive, but most employees feel that it is uncertain whether or not their feedback reaches top management. Even if it does, they are unsure whether or not it is implemented. The HR department was previously also involved in the process of setting

and following up on goals for departments and individuals. However, after the new CEO started work in spring 2018, this has not continued. In the previous process that involved HR, HR developed a framework for how departments should set targets. The objective was to ensure that targets were set in a consistent way throughout the organization and to make sure that the targets set were conforming with the overall organizational goals.

"A major issue with regard to goal setting and employee motivation is the fact that HR is currently excluded from the work that naturally should belong to us."

- Employee of the HR department

Diagnostic controls in the finance and HR functions

When it comes to the finance and HR function, only departmental targets are set in collaboration with, and followed up by top management. However, the individual employees of the finance function set and follow up goals along with their direct supervisor. This process remains within the department and is customized for each employee, in contrast to customer service where the individual goals are more standardized. The finance and HR function feels that it is not necessary to follow up on their individual goals. Firstly, because there are not too many employees within these two functions (neither exceeds 10 employees) so coordination within the function in order to reach set goals is feasible. Secondly, it is hard to quantify the work that each individual within these departments are performing. The output is more suitable to be quantified and measured on departmental level. For finance, the diagnostic controls in place on departmental level are mostly financially oriented, whereas for HR there are both financial and non-financial diagnostic controls in place. Measures of employee satisfaction and employee turnover are examples of non-financial control measures that HR are evaluated on. For finance, the focus lies more in meeting financial performance targets such as hitting budget targets and delivering final accounts at a predetermined point in time.

"Setting goals on departmental level rather than individual level is more suitable for the finance function."

- Employee of the finance department

Diagnostic controls in service functions

For customer service and also the sales department, the set budget and targets are broken down to critical performance variables on an individual level. In the customer service department, pre-set budgets and targets are given from top management and, in collaboration with the CFO and business controllers, they are then broken down. For the head of customer service and also team leaders within customer support, the focus is on getting the whole department or the whole team to reach the targets collectively. Their performance variables refer to the wider department and are not explicitly individual performance variables. For customer service agents, the critical performance variables are more concrete and refers to the performance on that specific individual. This is in contrast to individual goals for finance and HR employees that are more customized and only followed up on departmental level. For customer service and sales, the individual goals are more standardized and followed up on organizational level to, some extent.

The customer service agents are measured on the number of errands that they handle and on handling time for each errand. Previously, customer service agents were also measured on customer satisfaction, which was measured through customer surveys that was sent to customers, after they had been in contact with the customer service. However, this performance variable is currently not evaluated. The plan is to start measuring customer satisfaction again after a newly implemented telephone exchange is fully in place.

"We are evaluated on number of errands and handling time, previously we were also evaluated on customer satisfaction."

- Customer service employee

For the general customer service that handles less complex enquiries, such as billing and subscription matters, the daily target is 70 errands and a handling time of 5 minutes. For technical support, that handles more complex matters, the daily target is 50 errands and a handling time of 7 minutes. The customer service agents handle errands through both phone calls, email and chat. TeleCo also has a chatbot in place to handle simpler matters, but if the chatbot cannot solve the customers errands, the customer is put through to a customer service agent instead. In addition to the daily goals, the customer service agents at TeleCo also has the possibility to earn more than their standard salary through a bonus program that is in place. The bonus program is based on the number of errands handled during a month and the

customer service agents receive a certain bonus for having handled 1000 errands, 1300 errands, 1700 errands and 2000 errands respectively. The employees feel that the bonus program is motivation for handling more errands and they get monthly feedback from their team leaders on their progress.

"We get access to the performance statistics if we want to, I have asked for my progress report after half the month a couple of times and if I have let's say 800 errands after half the month I know which level of the bonus program to set my sight on and that motivates me"

- Customer service employee

The customer service agents expressed that while the daily goals sometimes seem a bit high, the bonus program levels are more reasonable. Some customer service agents take calls most of the time, while others respond to emails and chats to a larger extent. The levels for the bonus program is based on all errands (calls, emails and chats). The customer service agents also expressed that they feel more stress when they spend a day taking calls in comparison to a day spent responding to emails/chats.

"If I spend a day answering emails or chats, I am way less tired when I get home, compared to after a day spent answering calls."

- Customer service employee

Since TeleCo went through a recent merger, the customer service, similarly to other department, has been going through major reorganizations. As a result, the queuing times have increased and this in effect has lowered customer satisfaction. For the customer service agents this, in effect, means that they have to talk to an increased number of dissatisfied customers. This causes stress. However, as expressed by the interviewed customer service agents, it is easier to handle a dissatisfied customer over email/chat then over the phone.

The fact that customer satisfaction has decreased, along with measuring difficulties, is another reason for why TeleCo has not been measuring customer satisfaction recently. Before measuring customer satisfaction again, the rationale is that queuing time (a result of the number of errands handled and handling time) need to decrease, as that element is essential for basic customer satisfaction. When it comes to measuring customer satisfaction in general, some customer service agents feel that it will not be relevant to measure it as they claim that

some customers are already so dissatisfied. Therefore, the service that they provide to that customer will most likely not influence their overall review too much.

"Customer satisfaction is a very subjective measure, if a customer is already very dissatisfied it won't matter what I do, I will still receive a bad rating."

- Customer service employee

Other employees feel that it is highly relevant to measure customer satisfaction with the motivation that you can turn a dissatisfied customer into a satisfied customer, with good service. Also, it is argued that it is possible to form customer survey questions so that customers can rate both the overall service and the specific customer service agent.

"You can always turn a dissatisfied customer into a satisfied customer with good service and when it comes to measuring customer satisfaction it is all about asking the right questions."

- Customer service employee
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The head of IT and top management have also expressed that they understand that when it comes to customer satisfaction, they need to have a holistic view. They need to understand that a bad review might not reflect the performance of one individual customer service employee, but the performance of organization as a whole.

Another aspect is with regard to the balance of quantitative and qualitative performance measures. If you measure the amounts of errands handled, but not customer satisfaction for instance, that could lead to customer service agents neglecting service quality in order to handle more errands. This behavior has been observed by customer service agents. They argue that it is not uncommon to receive a call from a customer that has already been in contact with the customer service multiple times before, without getting their errand resolved. This supports the idea that there are customer agents that care more about the amounts of errands they handle than actually resolving the errands. Quantity over quality, in other words. Top management considers customer satisfaction important to measure and control, as customer service is an important factor in building long term value.

4.2.5 Interactive controls

Interactive control systems are in place in order for companies to effectively handle strategic uncertainties. Normally, companies choose carefully which subject to control interactively, as it would be too time consuming to attend to all matters in that way.

The interactive budget process at TeleCo

For TeleCo, the budget process is identified as an interactive control. As mentioned, the budget is set by the CFO and business controllers. This is then approved by top management and then passed on to the different departments that in turn break down the budget and set their own targets together with the CFO and the financial controllers. Although the budget is only set for each year, the CFO and business controllers follow up on deviations from the budget continuously, in collaboration with department heads and in conjunction with top management. The departments themselves have the possibility to make adjustments to the set budgets, but these potential adjustments have to be approved by top management. Currently, TeleCo has a strong financial focus after the recent merger, where they aim to realize synergies and be more cost efficient. As such, it makes sense for TeleCo to focus the interactive controls towards the budget process.

Challenge to minimize the use of interactive controls

TeleCo employees have expressed that there are issues within the firm that are handled interactively to some extent. The "goal spiders", the Great Place to work initiative and soft performance measures such as customer satisfaction are examples of such issues that is suggested to receive not enough time and resources. Together, they seem to be too time consuming for TeleCo, which is why they are halting to in different aspects. TeleCo should perhaps aim their focus towards a more limited scope of potential candidates for interactive controls. However, the over ambitiousness with regard to the interactive control system have other causes as well. An employee of the finance department displays how the malfunctioning of diagnostic systems can lead to an overloaded interactive system.

"*Since there has been issues with some of the digital systems you get into the habit of doing things manually, or at least double checking the output from the systems.*"

- Employee of the finance department

As a result of lack of trust in the digital systems, the interactive control system is overused as a consequence of a defaulting diagnostic system. As the digital information technology facilitate the diagnostic system in TeleCo, the function of these information systems has shown to be central when balancing the levers. TeleCo is working on developing the digital systems and to educate all employees in how they are used in the most efficient matter.

4.3 TeleCo's fit into the definition of a digital native company

As discussed in the theory section, digital native companies and digital immigrant companies are not two categories, separated from each other. The relationship between them is more similar to a continuum. TeleCo is a company that places very far towards being a digital native company. The following paragraphs describe how this is and how TeleCo relates to the definition of a digital native company.

4.3.1 Born into digitalization

TeleCo is a business that is born as a consequence of digital innovation, from the growing telecommunications industry. In line with the definition of a digital native company, it is then reasonably to argue that TeleCo is a digital native company by nature. This is because the original business purpose evolved around the digital innovation of telecommunications and still do. The telecommunications industry has not always been "digital" according to the definition of digitalization in this thesis. However, by the time TeleCo entered the industry, the sector had been digital for quite some time. The main reason being the expansion of the cellular device. In conclusion, this would mean that the emerge of businesses in the digital era of the telecommunications industry is one factor that imply that such a business is to be regarded as a digital native company.

4.3.2 External connectivity

According to the definition of a digital native company, connectivity is one other prominent feature of the digital native company. The empirics suggest that TeleCo is connected to a high extent, as they conduct operations by the use of many digital information flows. One reason for this is promoted by the industry itself, as network suppliers require the use of a number of digital information systems. The systems are used to overview different aspects of the delivered network. This is one such feature that further suggests the idea that the industry

promotes businesses within that industry to converge with the definition of a digital native company.

Another example of how connectivity bears expression in TeleCo, is the external interaction with customers. According to the customer service function of TeleCo, customers ultimately control what means of communication should be available to the market. Customers that would be regarded as digital natives are often keen to use the chat-function to resolve their errands. Digital immigrant individuals tend to tilt more towards the use of e-mail and telephone (Myers, Sundaram and Vodanovich, 2010). This is yet another factor that drives the operations processes toward either the ones of a digital native company or the ones of a digital immigrant company. In the case of TeleCo, the empirics suggest that customers are a mix between digital natives and digital immigrants. This was expected, if the presumption that telecommunications are used by the vast majority is valid.

This would then mean that external stakeholders are a significant factor to account for when categorizing digital native companies. In the case of TeleCo, suppliers pull the business towards the category of digital native companies. In the case of customers, the categorization is divided, with a growing emphasis towards the digital native company category, as the customer base tilt more and more towards digital natives.

4.3.3 Internal connectivity

Looking at the internal information processes in TeleCo, they are more akin to the processes of a digital native company than the opposite. It is understood, from the empirics, that employees tend to prefer the chat function for internal communication to more conventional means of communication, such as e-mail, phone or the personal meeting. By using the chat function, they can handle several conversations at the same time, with short response times, and don't have to interrupt what they or other colleagues are doing at that precise time. The empirics also suggest that the choice of information flows is also due to individual preference. Since most staff are categorized as digital natives, the individual preferences tilts towards the chat function. By the empirics it is understood that digital natives are attracted due to the following factors:

- The culture of TeleCo, where dynamic co-workers are rewarded.
- The industry, which attract digitally savvy co-workers.

This would then mean that the internal communications tilt towards the characteristics of a digital native company, due to the culture of TeleCo and the industry where TeleCo is active.

4.3.4 Content

The content of digital information systems is another aspect that separates digital native companies from digital immigrant companies. The empirics indicate that TeleCo's staff produce large amounts of information. The newsletter called "Biweekly" is of substantial quantity and most employees find it too long to be able to absorb all the information. Furthermore, many employees testify that the information is too vast and sometimes hard to act on, as it doesn't bring new insights or even has the reminding function. The customer service can't see the benefit from information to that tells them to hurry up, as this feels obvious. This causes employees to block information, more or less intentionally, just like a social media user would block certain accounts that adds no or too little perceived value to them. The notion that TeleCo's employees are keen to share information, and do so in a less formal manner, is consistent with the definition of a digital native and a digital native company. However, this can be problematic in an organization, since some information is crucial to maintain operational processes.

Concluding remarks

Concluding the observations above, it is found that TeleCo is a business that share many features with the digital native companies. It is also concluded that these characteristics are shaped from TeleCo's connectivity, both external and internal, as well as the content in those connections.

The internal factors are dictated by the interaction between co-workers, which is a process that the organization can control to some extent. Hiring digital natives produced process adherent to the definition of a digital native company.

On the other hand, the external factors are perhaps an even more distinctive
factor, when determining if the business is more or less coherent with the definition of a digital native company. The external factors are mainly driven by customers and suppliers, which can be hard to alter between more or less digital means of sharing information.

5. Analysis

In this section, the empirics will be analyzed in relation to existing literature and topics will be presented in four categories: 5.1 Understanding the digital native company, 5.2 Information flows, 5.3 Data management and 5.4 The role of the finance function in facilitating the use of information flows.

Looking at Simons (1995) framework, it displays management control as the combination of different levers of control. The levers materialize through a range of processes and information systems that inherits different qualities, which implies different compatibility with the organization that the management control system aims to control. It is then important to know what factors that drive the use of different processes and information systems. It is also crucial to understand that there are restrictions and possibilities in how the different processes and information systems fit with the levers in Simons (1995) framework. The preceding topic will explain those relationships.

5.1 Understanding of the digital native company

Considering the empirical section of TeleCo, the interviewees display a pattern of conduct that is very resembling with the definition of the digital native company. They not only push digital development within the organization, but also tend to behave differently in relation to the information technology.

This is interesting as the interaction within the digital native organization tend to compete with traditional control systems, as displayed by Simons (1995). As an example, Simons (1995) emphasize a focus on top management control. This is expected to compete with the inherent characteristics of the digital native company, as the organization urge to flatten the hierarchical structure. This would support the criticism that Ferreira and Otley (2005) and Longfield-Smith (1997) direct towards Simons (1995), with regard to his focus on top management control. In the light of the definition of the digital native company, this might be an area of Simons (1995) framework that requires further investigation and development. If management control flattens, this is expected to challenge the coherence of the levers of control, which is arguably important according to Mundy (2010) as well as Otleys (1999) conception about the key objective of an organization. The argumentation is also made that Simons (1995) tension between intended vs. emergent strategy is distorted in the digital

native company, as the workforce of the digital native company tend to promote the use of information systems.

The empirics also suggest that TeleCo's employees does not fear what Zuboff (2015) describes as surveillance capitalism. Merchant and Van der Stede (2003) further describes similar phenomena of motivational problems and lack of direction in organizations. These issues do not seem to apply to the digital native company, in terms of motivation to work with information technology. On the other hand, the organization tend to show lack of motivation, if seen in relation to an increased ambition to contribute to the development of information technologies. Tension seem to arise as the urge to contribute to the development of information technology clash with the lack of comprehensive understanding of alternative costs and implications for other functions, which is associated with implementing information technologies. This could be described by Simons (1995) tension between self-interest vs. desire to contribute. However, our empirics suggest that the organization does not always perceive itself as being self-interested, due to an inadequate picture of what the information technology would mean in practice.

Further research should also aim to develop the existing literature on management control systems in relation to digital native companies, as our empirics show that this type of organization tend to saturate the attention span of the organization, causing the tension between unlimited opportunity vs. limited attention, as identified by Simons (1995), to become exceptionally strong.

The following sections highlights issues in relation to the above-mentioned characteristics of management control and the digital native company. The first section is with regard to the information flows, which then follows by a discussion of data management. The last section describes ways of managing these challenges, in the light of already existing literature.

5.2 Information flows

As concluded in the empirics, TeleCo's organization consider some information flows to be more preferable than others, in line with the definition of a digital native company. Some information systems are shaped by external stakeholders, such as customers and suppliers. Others are shaped by internal connectivity and the content that is to be transferred by the

information systems. Below is a discussion about how the preferred information flows of the digital native company interact with Simons (1995) levers of control.

The Belief system

Looking at the information flows of TeleCo, the belief systems are rather detached from the external connectivity. In accordance with Simons (1995) definition of the belief system, the intended purpose of TeleCo's belief systems is to stimulate and direct search for opportunities and solutions to unforeseen issues. The system is materialized by information that flows from managers in a formal and systematic manner, out to the rest of the organization. The ability to measure performance of the belief systems, in the interaction with external stakeholders, is limited. This is a natural consequence of the contingent nature of the situations that the belief system aims to resolve. Simons (1995) also raise the notion that the belief system cannot be tied to formal organizational incentives, as codification goes against the very nature of that lever.

Assuming that the old cliché that "what is measured gets done" is correct, a weak ability to codify would implicate that the external connectivity plays a smaller role when working with the belief system. Simons (1995) also argues that the belief system is, preferably, un-coded and highly personal. This would push the idea that the information flow within the belief system enhance the emphasis on the inter-organizational connectivity and information flows, from managers to other employees.

As the internal connectivity of TeleCo is especially characterized by the features of a digital native company, information processes are found to be a bit skewed towards digital information flows. The empirics suggest that information flows within the belief system are mainly materialized through speed-texting and the staff handbook, which is available on the intranet. Other means of materializing the belief system is by posting "goal spiders" around the office. The level of digital technology that permeates the information flows differ, but empirics indicate that both flows of information are dependent on the receiving party to absorb, interpret and apply the information. The argumentation, as made by Ouchi (1971), that information systems enhance the measurability of outcome, does not seem to apply to the digital native company with regard to the belief system. As the information flow in the belief systems are also hard to codify, it is hard to estimate the effect of the belief systems. Simons (1995) framework have been criticized in this aspect, as the formal control system is more

concerned with the intended strategy, rather than the outcome of it. The Merchant and Van der Stede (2003) framework, on the other hand, puts a higher emphasis on informal control through "personnel" and "cultural" controls. The inability to codify and measure the effects of belief systems could arguably create problems with coherence within the organization. Lack of coherence and the sense of mission has been shown to be problematic, as displayed by Otley (1999), Mundy (2010) and Scherman et. al. (2012). The ability of an organization to work in the same direction is one fundamental aspect when evaluating the performance of a management control systems.

The challenge with lack of coherence, due to the free interpretation of received information, is especially significant in the digital native company. This is a consequence of the quantity of content that the digital native company tend to send through the information flows. From the empirics, we understand that co-workers tend to deliberately share information of low or no perceived value to the receiver, causing dilution of other information flows. This is materialized through large amounts of speed-texts, asking co-workers to work with more urge and to remind them of the amount of work that needs to be done. In contrast to what Mundy (2010) and Scherman et. a. (2012) suggest, the digital belief system does not seem to ease the tension of enforcing and enabling factors in the digital native company. The tension might be eased, assuming that the flow of information doesn't increase or the attention span doesn't shrink. However, this is not the case in the digital immigrant company. Quattrone (2016) discusses this issue as well and claims that having access to vast amounts of data might only make it more difficult to use the relevant data. This is arguably the case for TeleCo. Another aspect of Quattrone (2016), which is also observable in TeleCo, is the fact that the information technology allows for more decentralized communication of data. Information technology allows for all employees to share large amounts of content with a vast amount of receiving parties. This is vastly utilized in the digital native company, as digital natives are more comfortable with peer-to-peer collaboration than digital immigrants (Leung, 2003). This contributes to the overflow of the organization at the same time as it pushes for a flatter hierarchical structure, diluting information flow from top management. Simons (1995) should arguable put higher emphasis on the new hierarchical structure, in order to fully capture the complexity of management control in a digital native company.

Another challenge with the information flows adherent to the belief system in digital native companies, is the diversity of information. As digital natives and digital native companies

tend to be generous and less formal with their sharing of information (Myers, Sundaram and Vodanovich, 2010), empirics show that information with contradictory meaning is sent out into the organization. Speed-texts with information that emphasize employees to work quicker is mixed with core values that urge the employees to be "honest, personal and reliable". Assuming that the employees are working at the edge of their capacity, speed will inevitably be a tradeoff to what TeleCo describe as their core values. Essentially, in this context, speed-texts might be sent at the cost of employees not knowing how to prioritize the comprehensive reception of information.

Comparing the empirics to Simons (1995) reflection on the belief system and information technology, Simons (1995) suggest that the email function, as well as the audio-video conferencing, could overcome issues related to diffusing the content of the belief system. This might be accurate. Digital means of information technology could, theoretically, overcome issues based on time, distance and space. What is not brought to attention by Simons (1995) is the informal manner in which digital native companies use information technology to share large amounts of information with sometimes contradictory messaged. The problem is made worse as empirics show that information technology has not facilitated the absorption of information to the same extent as it has facilitated the diffusion of it.

The Boundary system

The information flows of TeleCo's boundary system bears similar characteristics as the belief system. The information flows in one direction, from the managers and out into the organization. The information flow might however be easier to connect to the outcome, than the information flow of the belief system. This is based on the idea that the violation of the boundary system is traceable, which is what the empirics suggest in TeleCo's case. This would support Sanchez-Rodriguez (2012) argument, that information technology frees up time for the finance function to focus on the role of a business partner to the organization. The boundary system within TeleCo is not very significant, but one aspect is with regard to in what way staff is expected to interact with other stakeholders. As communication is made with digital means, this can be traced, if suspicion of improper behavior would arise. This would perhaps be a less viable option in an organization where most information flows are conducted face to face or on the phone, as in the digital immigrant company. This is one important aspect of the information flows in the boundary system, namely that the preferred

information systems of the digital natives and digital native companies leaves digital trace that can be used to track specific information.

The argument is made that the issue of overloading the information systems, due to the vast amount and informal character of the information, is mitigated by the possibility to track the outcome. This is one important factor to why the boundary system is especially important in digital native companies. The boundary system could play a crucial role in safeguarding strategic risks associated with overflowing the information flows.

The boundary system has also showed to play an important role with regard to what Simons (1995) describe as business conduct boundaries. The empirics show that the digital native company tend to drive the use of digital information technology, in the liberate manner that is significant to that type of organization. This has shown to be problematic with regard to the systems that is used. The use of information technologies, which is not sanctioned by top management, has proven to be an efficient tool with regard to both codification and diffusing, both internally and externally. The systems can provide efficient solutions in the short term, but has shown to pose problems in terms of legislative breaches in relation to GDPR, for instance. The urge to capitalize on information technologies outside of the sanctioned systems has also proven problematic as this would result in a non-cohesive interaction with external parties, causing frustration when the experience with TeleCo depends on the individual that you happen to reach. In conclusion, the information technology tends to create environmental uncertainty in the shape of fast industrial changes, which need to be managed properly in order to manage control. The aspect is highlighted by Messner (2014), who brings to notion that industry matters for management accounting practices. In this context, the industry offers unwanted opportunities that could be managed by the boundary systems. However, the empirics suggest that this is still an important aspect of the digital native company, as it urge to develop the use of information technology. Unsanctioned use of information technologies can, as mentioned, bring both benefits and challenges. Extensive use of digital technologies is typical characteristics of the digital native (Myers, Sundaram and Vodanovich, 2010). On an individual level, the potential hazards from unfiltered usage of digital technologies mainly adherent to sharing too much personal information. However, on an organizational level, as illustrated by TeleCo, unfiltered use of digital technologies can create issues to the organization that the individual might not even be aware of. A way of utilizing the digital native company's urge for digital innovation would be to redefine the

strategic domain for the organization by balancing the boundary- and belief system (Simons, 1995). In the light of the argumentation made by Revellino and Mouritsen (2015), the conclusion is drawn that the organizational setting and knowledge within the firm is crucial when defining the strategic domain for the digital native company.

Looking Simons (1995), the notion that larger and more decentralized organizations tend to benefit from boundary systems with increased elements of information technology, seem valid in relation to the empirics. However, a crucial factor to account for in the digital native company, is the contingent character that the digital native company inhibits as a consequence of a vast opportunity search. Thus, information technology seems to bear the features of a double-edged sword, where the factor of opportunity is also the factor that pose challenges to the digital native company.

The Diagnostic system

The diagnostic system presents a reversed information flow in TeleCo's organization, where information flows from the bottom and up into the organization. It is characterized by the ability to measure output of a process and a high level of codification, as also suggested by Simons (1995). As the empirics suggest, the information contain both financial and non-financial data, with an emphasis on financial information. Most information is derived from TeleCo's ERP system and is then processed by the finance function and then reported throughout the organization.

Lower level managers and staff has no direct access to financial information. As discussed in the earlier sections, the financial reporting in TeleCo is restricted by laws that regulate publicly listed companies. This is one reason for why many managers feel that they need to use alternative means of measures to benchmark and track performance. Discussing performance in terms of non-financial information could be an alternative here, which is in line with Bhimani et al. (2014). They argue that KPIs, objectives and incentives need to stay congruent with new organizational responsibilities, as a consequence of implementing information technology. The implementation of technology cannot be classified as a disruptive element in TeleCo. However, the importance of the organizational setting still applies.

Linking non-financial metrics to value drivers pose a potential challenge to TeleCo. The argument that financial data is easier to measure seem valid. However, Brivot et al. (2014) and Sanchez-Rodriguez (2012) suggest the idea that both financial and non-financial data will improve as a result of using information technology. This would then imply that the digital native company has the prerequisites of managing the balancing both "hard" and "soft" data through its diagnostic system, assuming that information technology can be used to collect data from external stakeholders. An example of this could be customer enquiries on digital platforms. Balancing "soft" and "hard" control mechanisms is observed to be important for TeleCo's employees in terms of motivation to not only fulfill quantitative goals, but also address customer satisfaction. To properly balance enabling and enforcing features is also a notion that Mundy (2010), Scherman et. al. (2012) and Simons (1995) emphasize.

One important aspect about quantifying non-financial metrics, in TeleCo, concerns the coding of the non-financial information. As it shows, this factor presents contingent elements, dependent of the designer of the management control system. Customer satisfaction is for instance one such metric that is perceived as more complex to quantify and relate to value and individual performance. These findings challenges the argumentation of Mundy (2010) and Scherman et. al. (2012). One probable cause would concern the collection of non-financial information. As much of TeleCo's non-financial data is retrieved from external stakeholders, the ability to utilize information technology for data collection is limited by the dedication of those stakeholders. Assuming that digital native customers are keen to contribute to the sharing content, as Vodanovich, Sundaram & Myers (2010) suggest, the data selection would perhaps be skewed towards that group of individuals. This is also a feature that would drive TeleCo to make decisions that benefit that group, as their opinions are overrepresented in the collected data. Another important factor to account for is the digital native company's behavior of wanting to flatten the organizational hierarchy. In TeleCo, the financial controllers design the financial metrics and rely on the individual functions to set appropriate measures for value creation. This means that the different measures use different information flows to report the metrics, which is interesting with regard to the digital native company. As an example, digital natives tend to prefer to absorb information in the form of speed-texts (Vodanovich, Sundaram & Myers, 2010). This information flow is more common between middle managers and the operational staff, which is another potential reason for why the non-financial metrics receive more focus. These findings challenge the idea as brought forward by Spekle´ (2001), who argues that information systems allow for a more profound

integration of inputs. As the extraordinarily strong information flows happens within each function, they tend to be more decentralized in the digital native company, causing a higher emphasis on short term goals. This is perhaps a natural consequence of middle managers wanting to elevate the performance of their own function, rather than the performance metrics that apply to the entire organization. This is perhaps an example of how Simons (1995) idea about self-interest vs. desire to contribute is also much relevant to the digital native company.

As mentioned in the previous paragraph, operational staff in TeleCo experience that the communication from the financial staff is lacking, perhaps as a consequence of that other information flows are stronger. Furthermore, the information from middle managers sometimes deviates from the information that flows from top management, as middle managers trade the vertical perspective of financial performance for a horizontal perspective where the value chain is in focus (Samuelsson, 2010). Another aspect of the fact that top managers have limited knowledge about the information flow between middle managers and operational staff is the notion that the strain on operational staff's attention is unknown. This makes the tension between limited attention and available information particularly complex. The disaggregated information flow in TeleCo could be described as "bottom-heavy", causing the intended purpose, as set by top managers, to get lost due to the limited attention of middle managers and operational staff.

Simons (1995) acknowledges that diagnostic information systems offer possibilities of high codification. He further emphasizes that the diffusion of the diagnostic lever should not expand, as a consequence of digitalization. The argument seems to apply also to the digital native company, from a normative viewpoint. However, the outcome from the intended strategy in the digital native company seem to halt, as a consequence of the organizational vacuum between middle level managers and operational staff. The challenge of managing limited attention is not only connected to the diffusion of diagnostic control, it is also an issue of acknowledging the influence of different information flows and balancing them. The argument is made that the concept of diffusion is more complex than just high or low diffusion. To avoid unwanted search behavior, the transparency of the diagnostic control system should be limited. However, for the diffusion to be effective, top management need to make sure that the comprehensive metrics trickles down into the appropriate sub-metrics. This is hard to do if the communication between middle managers and operational staff is detached from the information of top managers. By linking all metrics to the same function,

the input of data could result in a more profound integration of information, in line with what Spekle´ (2001) argues. Simultaneously, the advantages of such a structure should be balanced against the risk of blocking emergent strategies from members of the staff that is closer to the operations, as is argued by Payne (2014). The managing of emergent strategies is an important aspect of the interactive system.

The Interactive system

Looking at the interactive information systems in TeleCo. The information flows in double loops between different parts of the decision-making group. TeleCo has chosen to place its information technology function abroad, which means that the physical distance has to be mitigated by information technology. This materializes through audio and video conferences. Other processes involve interactive budget processes and goal spiders, which are often conducted face to face. Although these processes are less signified by information technology, they are still shaped by the characteristics of the digital native company. This was expected, as the information flows internally, between individuals who bear traits of the digital native (Vodanovich, Sundaram & Myers, 2010). Digital natives have ideas about what the information technology should look like and what features it should possess. The increase in digital competence and enthusiasm about it, relates to the discussion about strategic uncertainties (Simons, 1995). TeleCo's empirics display that their customer service function has their own ideas about what systems are effective and good to use in relation to TeleCo's customers. This feature pushes development, but also feed strategic uncertainty. Attempts by TeleCo's managers to mitigate uncertainty have shown to lead to dissatisfied employees. The interactive system is based on the notion that the search for opportunities is contained on a project level that is ended when the project is done. The issue in the digital native company is that the projects are hard to end, as digital natives enjoy working with these processes. Interviewees have argued that there is no clear format for how emergent strategies are handled in TeleCo. The discussions about emergent strategies naturally starts between middle managers and operational staff. However, some questions require the answer of higher level managers. As the higher-level managers are to a high degree detached from those information flows, the participating parties of the lower level information flows has a hard time progressing and ending projects. It is argued that this feed strategic uncertainty in the digital native company. A more profound integration of data inputs from information technology, in line with Spekle´ (2001,) could perhaps facilitate the ability of higher level managers to make decisions and direct strategic uncertainties.

Another factor that creates strategic uncertainty within the digital native company seem to be the very nature of the ubiquitous information system, as presented by Vodanovich, Sundaram & Myers (2010), which permeates the information flows. As most information flows tend to be overloaded, and the responsibility of receiving and interpreting the information is put on the individual, it is easy for the individual to build his or her own case on what is to be regarded as a strategic uncertainty. TeleCo's employees tend to cherry-pick from the vast amounts of information, as there is no proper guidance on how to sort the information. This, in combination with the increased competence, puts high pressure on the interactive information systems. The complexity of having many different systems also becomes a foundation for misinterpretation and that in itself poses further strategic uncertainty. As information within the interactive control system is transmitted up, down and across the organization, this is a lever that is crucial to manage properly, when managing emergent strategies.

Looking at Simons (1995), a fundamental aspect of the interactive control system is that it has to be easy to interpret, in order for the participating parties to move forward in a productive manner. The importance of simplicity is also supported by the empirics of TeleCo. Simons (1995) suggests that information technology can be used to simplify data by drawing visually appealing information charts. Technology can further be used to select relevant data, as well as to make pro-forma calculations for different scenarios. This would then increase the ability to both codify and diffuse data, to a certain extent. This might however also mitigate the debate, which is crucial to the interactive control system. Mintzberg (1975) suggest the idea that formal management control systems might override the verbal conversation, which often bears important content. McKenney, Zack, and Doherty (1992) also suggest that conversation is important for shared context. What is found in TeleCo is that the shared context is to some extent lost in the ubiquitous information climate, as defined by Vodanovich, Sundaram & Myers (2010), where the amount of information can substantiate a large amount of hypothesis, that often contradict each other. In the context of the digital native company, it is therefore argued that the ubiquitous information system challenges the interactive control system, as the function of it is facilitated by simplicity. Information systems can simplify complex matters into information charts, like Simons (1995) propose. However, the vast body of information seem to override that advantage. In the light of these insights, it is suggested that the digital native company should apply a sort of "reversed

digitization process" to the interactive system. The purpose of which is to manage strategic uncertainties to develop information technologies with precision.

The internal control system

Simons (1995) suggested use of the internal control system involves the safeguarding of information. This is also relevant in digital native companies, as they are hierarchically bottom-heavy by nature. The empirics suggest that this structure shift the power-balance to the business units, from the information technologists, which is problematic from a perspective of safeguarding information (Simons, 1995). However, a significant task of the digital native company is to mitigate and control the overloading of information flows, as well as to estimate and manage the ability to absorb information in the organization. The argument is made that this is not emphasized enough by Simons (1995), in relation to digital native companies. In terms of structural, staff and system safeguards (Simons, 1995), the structural safeguards would need to limit the amount of information that is transmitted through the information technology. Staff safeguards need to address issue with the available attention of the staff force, to ensure that the information properly prioritized and absorbed. System safeguards could be used to share the power over information technologies between the information technologists and the business unit that perform operational work in the systems. This is important as the operational staff possesses tacit knowledge that is valuable to the development of the organization (Payne, 2014). The empirics of TeleCo's operations suggest that the business units of the digital native company want more flexibility when working in the systems. A shared responsibility for altering key functions could be a way of ensuring transparency in the information systems, at the same time as the advantages of having a bottom-heavy and disaggregated diagnostic system is utilized.

Concluding remarks

What is significant about the management control system of the digital native company, with regard to the information flows, is the amount of information that is generated. Information technology has the power to absorb large amounts of data through a vast amount of information technologies. The same systems can then be used to diffuse data efficiently (Simons, 1995). This is a very significant aspect of the digital native company, the liberal approach to transmitting content through the flows of information. The vast amount of created information tends to distort the tension between limited attention and unlimited

opportunity, which Simons (1995) describes. Just like the ubiquitous information system can cause an individual to block certain users on social media, due to them posting vast amounts of information with low perceived value, the digital native tends to respond in a similar way in the digital native company. They block certain types of information, as the attention is limited. When designing the management control system for a digital native company, it is therefore suggested that the management control system needs to include structured directions on how to estimate the available attention span, as well as giving directions on how to prioritize between different types of information. This is especially complex in the digital native company, as information is produced from different sources. The neglect of these factors might result in individuals having different ideas about what the information depicts about the organization and how it's performing.

When estimating the level of attention that's available in the organization it's important to recognize that different types of control systems can be coded and diffused to different extents (Simons, 1995). Depending on how well this is done, different types of information will absorb different amounts of required attention from the receiving party. It is found that information technology can alleviate the diffusion of information, while simultaneously not alleviating the absorption of that same information to the same extent. As the levers of control change character when applying information technology, the whole management control system needs to be rebalanced, in order to retain internal consistency (Mundy, 2010). This includes limiting certain information flows and letting others have more space.

Important to notice is also that the extent of which information technology is used within the organization, is shaped by different factors. Digital native companies are most often keen to drive the development of information technologies. However, external stakeholders also influence the prerequisites for using digital information systems. This complicates the decision of what level of information technology usage is appropriate. Below is a discussion that further evaluates the management of data in relation to the management control system.

5.3 Data management

One interesting aspect of digital native companies is the data management that it drives. As reflected on in the previous section about information flows, different levers utilize different levels of codification and data management (Simons, 1995). One important reason for this is the level of codification that is possible for each lever. The level of codification that is

possible is dependent on factors adherent to the type of information technology that is being used, as well as the information that is transmitted through the information flow and the possibility to uncode such information. These factors tend to differ between digital native and digital immigrant organizations, which is why this is an important matter to discuss when balancing the levers within the management control system. Information that is less likely to be amplified by the increased ability to codify might have a different impact, in relation to other types of information. This challenges the managing of tension that arise between different types of information.

What is also interesting, in relation to the possibilities to manage data in the different levers, is the alternative cost to the development of different information technologies and data management within these. Simons (1995) focuses on the tensions that information technology presents, however the costs of implementing these measures are not as discussed. The empirics from TeleCo's organization suggest that the digital native company spend much time and resources on implementing rigorous systems for data management. The following section aims at depicting how this represents an alternative cost that need to be taken into consideration and to be managed within the digital native company

Data management and the information flows

Observing the empirics of TeleCo's organization, it is found that data management is the result of a process, where multiple business units interact with information at different stages of the information flow. This is also shown by Carlsson-Wall and Strömsten (2018), that functions can interact as their traditional tasks overlap. Looking at the diagnostic control system of TeleCo, the decision makers tend to ask for information, unaware of the cost of retrieving that information. Management has problems with understanding the entire information flow, as this is clouded by lack of information and profound understanding of the information technology. This is also shown by Payne (2014), who argues that the implementation of information technology can cause a loss of tacit knowledge connected to the profound functions of the information system. Managers and members of the staff want digital solutions but have problems identifying what it would cost the organization in terms of time and resources to produce that information. Carlsson-Wall and Strömsten (2018) display how the finance function struggle for power over technology staff. Caglio (2003) also develop the notion of a hybridization between the finance function and the IT-function. Carlsson-Wall and Strömsten (2018) shows how the influence of technology staff has

increased through three phases of digitalization. This is perhaps an accurately described trend of the digital immigrant companies. However, in the digital native company, the accountants and other staff members tend to reverse this trend. They engage in- and drive digital development with detailed requests, without fully comprehending the alternative cost to the suggested features. This relates to Payne (2014), with regard to the importance of tacit knowledge. The tacit knowledge of the IT-function tends to be overridden by other powerful functions. However, the operational staff members possess tacit knowledge about specific features of importance of that particular function, that should be implemented into the system. The argument is therefore made that there's a clash of tacit knowledge, from the digital native company's urge to develop information technology. The ideal outcome when designing the diagnostic information system is perhaps to combine the two types of expertise. However, this is challenging in the digital native company as the power balance is shifted due to a shift in competence. Looking at Bucher and Strauss (1961) article about professions as segments in motion, the digital native company tend to shift the role of the finance function. Digital innovation and the digital natives within the organization tend to see information technology as a part of their sense of mission. They are expected to utilize digital innovation to control the organization. The work activities also tilt towards the use of digital information technologies, in relation to both external and internal connectivity. The new definition of the segment creates better digital confidence and materialize as more involvement and initiative taking, at the expense of the IT-function's decision-making power when managing data and information flows. The shift in inter-power relations also tend to distort the natural tension between information technologists and accountants, which might be a factor that secures the mitigation of manipulation of the data management process, in favor of certain departments. If the business unit that is responsible of the output is capable of altering definitions of KPIs, in the information technology system, without the transparent communication of such, the management control system might be less efficient with regard to Simons (1995) internal control lever. This might be a disadvantage of a bottom-heavy diagnostic control system, as the business processes are complex and financial data can be hard to link to the different value drivers in the organization. This is especially true in a finance-dominated organization, as it is expected that top managers are not capable of identifying manipulation of data management.

Data management and its perceived relevance

Schäffer and Weber (2017) argues that data management is one of eight central challenges that controllers will face as a result of digitalization. They claim that it is crucial to invest heavily in the foundation of the structure, the chosen data needs to be reliable and relevant for the chosen purpose. In addition, this view is further supported by Quattrone (2016) who highlights the fact that digitalization and the management of big data might lead to worse use of the data in terms of control, steering and decision-making.

Our empirics support the argument that Schäffer and Weber (2017) describes, also in the digital native company. The ubiquitous information climate in TeleCo allows for extensive data management where information can be found on a vast number of factors. However, this does not address the issue of perceived data relevance. As the digital native company tend to attract employees that fits the definition of the digital native, the perception of the professions tends to change. The empirics suggest that the interviewees put high demands on being competent about information technology and data management. Comparing the empirics to the article by Bucher and Strauss (1961) about segments in motion, the digital natives tend to have a shift in their sense of mission. The current perception of the interviewees own professions includes the competence about data management. Many of the interviewees describe ideas about how the information technology should be handled and what information is relevant. These tendencies are not only found in the higher sections of the hierarchical structure, but also in the lower. Operational staff members in the lower parts of the hierarchical structure experience that they have good ideas that they can't seem to get a response to from higher level managers. This in turn has fed skepticism towards certain measures. Measures on customer satisfaction is an example of such a measure, where the shifts in segments improve knowledge about information technology on one hand, but also results in higher demands on the information systems. This facilitates concerns amongst the operational staff about what it should be and how performance is measured.

From the interviewees, it is understood that challenges with perceived data relevance stems from the information flows. Interruptions in the flow of information, due to hierarchical structures, tend to cloud understanding of the data. Many of the interactive information systems, where questions of this nature are raised, are limited to include the head of function and the operational staff. This results in a discrepancy between the information flow that motivates the measures and the interactive information flow where members of the

operational staff can express their ideas about the information system. As Simons (1995) suggest, too much interactive control activities, can lead to managerial problems with staff. Yet, the digital natives want to have more impact on these control systems. This is a tension that needs to be recognized and managed. This is an area where the advantages from information technology is limited, as just supplying the measures and the results through information technologies is sometimes not sufficient in the digital native company. As the definition of the professions within the digital native company has changed, there seem to be a need for personalized information about how the performance measures connect to results, on a more comprehensive level, where the individual contribution is emphasized. This is a way to facilitate perceived relevance and understanding on the metrics amongst operational staff. The digital native think about information technology on a comprehensive level and to direct that attention and draw benefit from it, they need a better understanding of how their individual performance relates to the outcome of data. This is a measure that is expected to facilitate the use of tacit knowledge, as emphasized by Payne (2014). It is also possible to argue that it will mitigate misdirected attention, which is crucial when information flows produce high volumes of information. The following section describes what the finance function of the digital native company can do to manage information within the digital native company.

5.4 The role of the finance function in facilitating the use of information flows

Highlighted in the previous sections of the analysis is the fact that digital native companies face unique challenges. Challenges with regard to how the management control system should be designed and used in order to manage information flows and data that they generate. Even as information technology is welcomed by staff, it has to be channeled and facilitated properly, in order to add value to the organization. As shown in previous sections, the combined output of data from all functions overwhelms the receiving parties of that data. As a consequence, the digital native company needs to seize control of the total data output. It is argued that giving one function the task to diffuse data would be a reasonable way of seizing that control. This would limit the ubiquitous information climate within the digital native company, thus providing direction to emergent strategies and strategic uncertainties. Designing and managing management control systems is a natural responsibility of the finance function, due to its superior understanding of accounting. Due to this, the following

chapter discusses the possibility of using the finance function as a gatekeeper and facilitator of information flows in the digital native company.

The finance function - gatekeeper and facilitator of information flows

In addition to the gatekeeping role that the finance function already holds (Simons, 1995), the finance function need to take on a facilitating role when it comes to the use of information flows. In contrast to digital immigrant companies, where IT normally drive the digital transformation, the finance function of the digital native company is already focused on implementing information technology. The idea of using the finance function as a facilitator of information is not new. Goretzki et. al (2017) argue that controllers, as a part of the finance function, have a "double-edged" character as they are supposed to both enable and constrain information flows. By doing so they create information symmetry or asymmetry and present information differently to different functions. In the digital native company, this role is natural to the finance function. Goretzki et. al (2017) also challenges this view by raising the notion that the finance function must present and produce information in a "truthful" manner, as well as having to be careful when deciding what information they present to whom and in what way. The power struggle between the IT-function and the finance function, as described by Carlsson-Wall and Strömsten (2018), is perhaps a sound element in this context. The tension from the IT-function could facilitate the internal control lever, as discussed by Simons (1995). As they have a superior access to data, they can mitigate attempts of manipulating information flows.

By collecting all data in the finance function, the finance function could gain control over what information is diffused to different parts of the organization. However, the ubiquitous information systems, which is significant in the digital native company, still challenges the realized outcome of such a management control system. The very nature of the ubiquitous information system is that it's comprehensive character (Myers, Sundaram and Vodanovich, (2010). An important aspect of managing these characteristics in the digital native company, includes the notion of defining the strategic domain of the organization. To direct information flows to the finance function is a way of managing these challenges. By displaying coherent and carefully chosen information, the digital natives within the organization have less information to anchor their hypothesis to. It is also reasonable to assume that by centering information to the finance function, it would gain a higher prioritization to other, less formal flows of information. However, in addition to redirection the information flows, the finance

function also need to manage information that flows from peer-to-peer. As a facilitator and gatekeeper of information, this role is important for defining the strategic domain for peer-to-peer information flows. Simons (1995) boundary- and belief system could be used for this purpose. The levers would include information on what information technology to use in relation to different parties, as well as what matters are preferably discussed in those forums. As the finance function would have a more direct information flow to operational staff, it is also argued that they would manage this task well. They would gain tacit knowledge with regard to how information flows are best designed, which relates to the line of argument that Payne (2014) suggests. By removing the information vacuum between middle-managers and operational staff, the finance function would facilitate a cleaner flow of information and that would perhaps also depict a clearer image of the alternative cost of developing information technologies. Rather than having the different functions expressing needs directly to the IT-function, the financial function could weigh the comprehensive cost of developing the systems to the estimated value of such measures.

6. Conclusion

6.1 Summary of contributions

This paper contributes to the existing research by differentiating between "digital native companies" and "digital immigrant companies" in terms of management control and digitalization. Previous literature within this research area are based on what we refer to as digital immigrant companies. The notion of a "digital native" and a "digital immigrant" has already been developed on an individual level (Myers, Sundaram and Vodanovich, 2010). However, our contribution includes defining and implementing the term digital native on an organizational level. In order to explore digital native companies in connection to management control and information technology, a single case study on a telecommunications company (TeleCo) was conducted. The aim of the study was to answer the following research questions:

What characterizes a digital native company? What does management control look like in digital native companies? What role will the finance function play in facilitating the use of information flows in digital native companies?

The empirical section, based on interviews with TeleCo employees, displays a pattern of conduct resembling the definition of a digital native company. Firstly, in the sense that employees push digital development and secondly in the sense that employees behave differently in relation to the information technology. In essence, in TeleCo there is a low internal resistance to the use of information technology, rather there is an unbounded use of it.

The consequence from the unbounded use of information technology is overloaded information flows. Information technology is used with little structure and few restrictions. This leads to a variation in content across information channels. An important downside is that overloaded information flows seem to hinder effective communication.

The notion of overloaded information flows also presents another interesting aspect of digital native companies, namely data management. Simons (1995) focus on the opportunities that information technology presents, which is similar to what was found at TeleCo. However, the costs of implementing these measures are less carefully considered. Managers and staff members want digital solutions, but have problems identifying what the cost will be in terms of time and resources to provide this. Employees within digital native companies tend to see information technology as a part of their sense of mission. This mindset creates better digital confidence and materialize as more involvement and initiative taking, but at the expense of the IT-function's decision-making power, when managing data.

The notion that data management is a natural challenge, following digitalization, has already been acknowledged by Schäffer and Weber (2017). The fact that having access to large amounts of data might lead to worse use of the data in terms of control, steering and decision-making have also been recognized by research (Quattrone, 2016). The empirical data is consistent with this notion, especially in terms of making sure to transfer data across overloaded information flows and in terms of using information technology for communication in general. It was observed that employees of digital native companies need a better understanding of how the different functions interact, as this could mitigate misdirected attention. This is crucial when information flows produce high volumes of information. In addition, it was concluded that the digital native company view data management as an entire flow of events. From the collection of data to the communication and conclusions that are

drawn from it. This is important to consider when presenting the results from data management.

With this background it can be concluded that even a digital native company, such as TeleCo, face challenges in light of information technology. Challenges that have implications for how management control systems should be designed and used in order to make beneficial use of information flows and the data that these generate. Having employees that embrace information technology is an advantage for many reasons, but being able to use it in a meaningful way relies on having a good structure as a foundation. This responsibility should be the mission of one organizational function, to facilitate the use of digital technologies and the generated information flows. In TeleCo's case, it is argued that the finance function should be the facilitator of the use of information flows, as the finance function understand the need for technological development but also has a panorama view of the organization.

The shift in the accounting function, to becoming more of a business partner due to digitalization has been explained in earlier research (e.g. Bhimani, 2014; Desai, 2007; Favaro, 2001; Järvenpää, 2017). This strengthens the argument that the finance function is suitable to be the facilitator of information flows. Essentially, the finance function in the digital native company should have a double approach, not only being a gatekeeper but a facilitator of the use of information systems. This view is line with Goretzki et al. (2017), who claims that controllers should have a "double-edged" character, by both enabling and constraining information flows.

6.2 Limitations and suggestions for future research

This study started by distinguishing between digital native and digital immigrant companies. The aim of the study was to investigate the management control system of a digital native company and to evaluate what role the finance function will play in facilitating the use of information flows in these companies. Prior research has already looked into management control and digitalization, with regards to what we refer to as digital immigrant companies. Our single case study on TeleCo, a digital native company, aimed to further extend this research area. We found some interesting contributions, but below is a section that describe limitations of this paper, as well as suggestions for future research.

Firstly, as the study was conducted through a single-case study, this can make results difficult to generalize. Nevertheless, a single-case study provides depth and great understanding of a phenomenon, and as previous research has examined "digital immigrant companies" in terms of management control and digitalization, we did not see the need for a contrasting case study. However, a suggestion for future research is to conduct a similar case study of a digital native company in another context, to examine if the results would be in line with the results of this study or not.

Secondly, as the primary source of data was conducted interviews, a potential limitation is subjectivity of the authors. However, in order to minimize this risk, the authors have tried to pursue open-mindedness, by asking open ended questions and having both authors present at all interviews.

Thirdly, as established earlier, the digital native companies and digital immigrant companies are not two categories, separated from each other. The relationship between them is more similar to a continuum. TeleCo is regarded as a digital native company, but as the level of such is depicted as a continuum between digital native and digital immigrant features, there might still be more extreme cases of digital native companies. TeleCo is for example limited to some extent by their customer base, which often prefer TeleCo to work in ways that fits the definition of a digital immigrant company. Therefore, it would be interesting to research a business that is even more aligned with the definition of a digital native company. Such a case company would perhaps have an even more profound understanding of the processes behind data management and the build-up of information technology.

Appendix 1: TeleCo Interview questions

Interview questions
Introduction How long have you been working at TeleCo? What background do you have? What are your main areas of responsibility at TeleCo? Does your function cooperate with other functions? In that case, in what way?
Digitalization Can you describe the digital tools that you are working with today? Does TeleCo have digital systems that are used by more than one function? What functions share digital systems? How are the different systems integrated? To what extent are digital tools an important part of the internal communication? How important are the digital systems for your function? To find and attract new customers? To make business decisions? Who design and maintain the function of your business systems? How have the digital tools changed over time in TeleCo? Would you say that TeleCo is ahead of other businesses, in terms of being digital? Do you reckon that TeleCo should be even more ahead, in terms of being digital? If so, in what ways and what is holding you back? Do you think that the rest of the organization wants TeleCo to be more or less digital? Is this different between different functions or are there other factors that contribute to

different views? Do your stakeholders (customers, suppliers etc.) think that you should be more digital or do they prefer you to be less digital in some aspects? Why do you think this is?
Belief systems Do you have any guiding message that you use internally in your organization? How are these communicated to you? Are digital tools used to communicate the digital message? Can you give an example of when you've had use of the guiding message, when making a decision? Are you working actively with values at TeleCo? If so, how is this done? Are you arranging dinners or other special activities where you socialize outside work? Do you experience any differences after the recent merger? Are the two cultures a good match? Are there differences in what is expected from you in your current role? Other differences?
Boundary systems Do you have any general boundaries to your job? Rules etc.? How are these expressed in that case? Are you using digital tools to communicate these?
Diagnostic controls Is your performance measured using KPIs? In that case, what are they? How are your goals set and how are they followed up on? Who follows up on the KPIs and are part of that process? Are digital tools used to measure KPIs? If so, are they contributing to a better follow-up? Or is the follow-up made more difficult due to the vast access of information? How do you decide what data is important? Do you think that the KPIs that A3 uses are good? Are the correct things measured? Is the

goals reasonable? Is the communication of the KPIs clear and transparent to other parts of the organization?
Interactive controls To our understanding, the comprehensive targets are first set by top management and then made more granular within each function. How does that process look like? Top-down or bottom-up? Do different departments have the ability to come up with feedback and how would that materialize in that case? Do you work with specific questions when you give and receive feedback from other departments/colleagues, or are you working with more general communication? How does this communication materialize? What means of communication do you use?
Final questions What challenges do you experience to be the biggest to TeleCo? What experiences do you experience to be the biggest to your department? What keeps you up at night?

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