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Innovation in the Banking Sector -Ambidextrous Management Control Systems

Prepared By:

Alaa Al Madani

Danny Andersson

Supervisor:

Anders Anell

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Abstract

Title: Innovation in the Banking Sector - Ambidextrous Management Control Systems.

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Authors: Alaa Al Madani & Danny Andersson.

Supervisor: Anders Anell.

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Purpose: The purpose of this paper is to develop an integrated theoretical framework that conceptualizes the relations between MCS and ambidexterity. Further, using the integrated theoretical framework, this paper aims to investigate the potential tensions that can arise as banks engage in innovative activities and the role of MCS in achieving organizational ambidexterity.

Theoretical framework: The theoretical framework of this thesis is built upon theory regarding organizational ambidexterity, management control for innovations.

Methodology: A qualitative research approach consisting of an explanatory multi-case study

Empirical foundation: The empirical data consists of both primary and secondary. The data was collected through interviews, annual reports, consulting firms' reports, and articles.

Conclusions: The findings of this paper suggest that there is a need for banks to adjust their management control systems (MCS) if they are to foster innovations and be truly ambidextrous. The design of the MCS seems to be of significant importance to achieve contextual ambidexterity. This is concluded as we have found tensions between innovative activities and the banks' MCS, which are designed for core banking activities and has failed to adjust and support both innovative and core activities. This implies that for organizations to be ambidextrous, they are in need of ambidextrous management control systems.

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Alaa Al Madani

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Danny Andersson

1. Introduction

This chapter sets the scene for the reader and provides knowledge of what the thesis mainly covers. Section 1.1, provides background information of the main areas of interest for the thesis. Section 1.2, discusses the relevant problems for the study. Section 1.3 presents the purpose of this thesis and section 1.4 presents the definitions of management control systems and innovation.

1.1 Background

The banking industry has changed drastically in recent years, to the point where cash is no longer even part of some banks' regular services. Customers have high demands on technical solutions and the interaction between banks and customers are no longer confined to physical meetings. For instance, 10% of the customer appointments of Swedish bank Nordea are carried out online, mobile-banking transactions increased by 90% in the year of 2014, and their mobile bank application gained a thousand new users every day in 2014 (Nordea, 2015). Technology is also lowering the costs of switching banks and the number of customers that are doing so is increasing. This has resulted in an increase in competition between the traditional banks and has changed the power balance between customers and their banks (PWC, 2014b). Compared to other sectors, digital transformation has not yet been adopted to its full potential by the banking sector, a sector where innovation is slowly considered (EY, 2014). This has opened the door for more innovative organizations such as technology companies, which are proceeding aggressively with digital innovations and capturing parts of the banking value chain (Juan & Moreno, 2014).

Some voices are predicting the terminal decline of traditional banks as the industry is under attack from multiple fronts such as peer-to-peer lending (P2P) which is an online service that matches lenders with borrowers, digital payments and online automated portfolio management "robo advisors" (Arnold & Jenkins, 2015). The consultancy company Accenture estimates the new competitors to erode one third of traditional banks revenues by 2020 (Juan & Moreno, 2014). Some bankers have expressed worries in attracting human capital, "all of the good ones (MBA graduates) are going to boutiques, to non-bank financial companies, or to technology companies" (Arnold & Jenkins, 2015). Further, according to Renaud Laplanche, Chief Executive of the world's biggest P2P platform, the technology companies have a clear advantage: they are unencumbered by old expensive systems and new regulatory overheads (Arnold & Jenkins, 2015).

Companies like Google, one of the most innovative companies in the world (Finkle, 2012), have challenged banks in core activities like payments, with the introduction of a debit card for their service "Google wallet" (Juan & Moreno, 2014). Innovation is a core feature in the culture of the new innovative competitors which distinguish them from traditional banks. "The banks are not innovators" says Jacob de Geer, the CEO of Izettle, a Swedish technology-company that offers mobile payment solutions to small business owners. According to de Geer, banks have failed to offer an equivalent solution and are stuck in their old ways (Brundin, 2014).

As illustrated above, innovation is now a key success factor as new competitors are challenging the established banks. Digital transformation in the banking industry is hindered by its conservatism and legacy (EY, 2014). This puts banks in a strained position where, on the one hand, rapid technological innovation is a new success factor, while on the other hand, some of their core activities still demand thorough management controls and risk avoidance approach. This implies high demands on managers to create a successful environment for innovation, an environment that is traditionally characterized by high autonomy of employees and risk taking, characteristics that may be problematic to incorporate in traditional banking culture.

1.2 Problematization

"It is quite possible for competence in an inferior activity to become great enough to exclude superior activities with which an organization has little experience"
(Harriott, Levinthal, and March 1985 cited in March, 1991, p.73).

This statement accurately describes some of the voiced beliefs about traditional banks; that they are stuck in their "old ways" and have ignored superior new alternative products and services. Organizations operating in uncertain and evolving environments need to explore new opportunities and exploit existing core activities simultaneously, to assure long term success (March, 1991). To carry out the two activities of exploration and exploitation simultaneously can be problematic as there are tensions between them because they are competing for the same resources. The ability to balance and solve the tensions between these opposing forces (exploration vs. exploitation) is referred to as ambidexterity. This ambidexterity enables organizations to balance between exploiting their existing competences and exploring new opportunities at the same time. According to O'Reilly and Tushman (2013), organizational ambidexterity has been of high significant interest for research in the last 15 years. The study of this topic can help managers and organizations understand how to explore and exploit. Although this area has been developed decades ago (Duncan, 1976; March, 1991), research on how organizations work to solve these tensions in practice is limited and several authors call on the need of more qualitative research in this area (Agostini et al. 2016; O'Reilly & Tushman, 2013). We regard a study on the demand for ambidexterity in traditional banks to be of academic interest as they are suitable organizations to serve as research cases. They are mature organizations with developed exploitation activities and are now forced to incorporate a higher level of exploration as a result of the above mentioned changes in their industry.

Whether it is due to new competitors or to the demand of digital solutions from customers, banks are thought to engage in explorative activities and create an innovative internal environment. As a result, they are likely to make both organizational and strategic changes which force them to deal with the issues of achieving ambidexterity, i.e. balancing and solving the tensions between these activities and their core businesses. This posts the question if the

organizational features, typically assigned to innovative environments, are compatible with the banking environment and whether banks have adapted their management controls systems to:

- 1: Become more innovative
- 2: Achieve a balance and solve the tensions between explorative and core activities

1.3 Purpose

The purpose of this paper is to develop an integrated theoretical framework that conceptualizes the relations between MCS and ambidexterity. Further, using the integrated theoretical framework, this paper aims to investigate the potential tensions that can arise as banks engage in innovative activities and the role of MCS in achieving organizational ambidexterity.

1.4 Defining MCS and Innovation

As the focus of this thesis is on how MCS are used to balance and solve tensions with the aim of enhancing innovation, there is a need to define MCS and innovation. Many authors in management control literature have defined management control systems. Most of the definitions share the same characteristics and might vary slightly in some details. Ouchi (1979, p.833) defines MCS "as mechanisms through which an organization can be managed so that it moves towards its objectives". Otley (1999, p.364) defines MCS as systems that "provide information that is intended to be useful to managers in performing their jobs and to assist organizations in developing and maintaining viable patterns of behaviour". Simons (1990, p.128) defines MCS as "more than devices of constraint and monitoring. MCS are the formalized procedures and systems that use information to maintain or alter patterns in organizational activity". In addition Malmi and Brown (2008, p.290) states that "management controls include all the devices and systems managers use to ensure that the behaviours and decisions of their employees are consistent with the organisation's objectives and strategies, but exclude pure decision-support systems". Merchant and Otley (2007, p.785) suggest that "management control system is designed to help an organization adapt to the environment in which it is set and to deliver the key results desired by stakeholder groups". Chenhall and Moers (2015, p.1) define MCS as "a set of many formal and informal input, process and output controls that are used by management to achieve organizational goals; the controls are connected by many complementarity relationships".

Innovation can be defined as the adoption of a new idea or behavior in the products, services, systems, policies and programs of the organization in order to adapt to the environment and to maintain effectiveness and competitiveness (Danampour & Gopalakrishnan, 2001). Innovation can be applied in technical and administrative terms; administrative innovations adoption by organizations drive the adoption of technical innovations more than the other way around (Danampour & Evans, 1984). According to Chenhall and Moers (2015); innovation is the creation and adoption of new processes, products and services that generates substantial results.

Radical innovation results in fundamental changes in the processes, products, structures technologies and methods of the organization while incremental innovation results in the refinement of these aspects of the organizations (Forés & Camisón, 2016). For the purposes of this thesis, innovation is restricted to digital development and transformation of the offered products and services in the banking sector.

2. Research Method and Design

The purpose of this chapter is to provide the reader with the research method and design, the motives behind method selection as well as limitations of method choices. Section 2.1 presents the research method of this thesis. Section 2.2 presents the approach to the selection of the case companies. Section 2.3 presents the data collection process and the main sources of data used in this thesis. Sections 2.4, 2.5, and 2.6 present the literature review method, data analysis technique and limitations of the thesis research method respectively.

2.1 Case Study

The research of this paper will be conducted with a qualitative method approach as we have evaluated it to be the most suitable strategy to fulfill the purpose of this thesis. As we intend to investigate the use of MCS in practice, we aim to collect data on, not only which MCS are applied by the banks, but more importantly, how these MCS are perceived by the individuals in the organization. A qualitative method can more effectively investigate how individuals perceive their surroundings (Bryman & Bell, 2013). Further, researchers that have conducted quantitative research in the field of ambidexterity and innovation call for qualitative research to further advance the knowledge on how ambidexterity is managed in practice (Agostini et al. 2016).

There are different types of qualitative research alternatives that can be carried out (Bryman & Bell, 2013), and the method of this thesis is a case study approach. This approach has been deemed the most suitable approach as it allows the researcher to capture the holistic and meaningful real-life characteristics of, for example; organizational and managerial processes (Yin, 2009). This is well aligned with our aim to investigate possible subtle tensions in the banks' environment. Our research question is focused on how banks are adapting to the need for innovations and how they perceive and manage the associated tensions, thus, our research is carried out in an explanatory fashion on contemporary events. For this type of research, aiming to answer questions of the "how-type", case studies are the most suitable as they aim to deal with operational links rather than mere frequencies or incidences (Yin, 2009).

According to Trochim (2006), inductive and deductive approaches are the two main and broad reasoning methods. Deductive reasoning starts from the general towards the more specific i.e. starting with the theory followed by collecting observations or empirical data in order to find evidences that can be compared to the theory by researchers. Inductive reasoning works in an opposite way i.e. starts from the specific observations or data to the more general theory. Accordingly, this thesis contains both inductive and deductive features. The deductive component is based on the developed integrated theoretical framework used to guide the data collection process while the inductive component is reflected through analyzing the collected empirical data based on the theory. It is a common occurrence that the data collection process will affect and change the relevance of the chosen theory of a research (Bryman & Bell, 2013). We have been

open to this approach when collecting secondary data and have made adjustments to our literature review. This adds to the mixed approach of this thesis, combining both inductive and deductive features as we have moved back and forth between data and theory, before finally selecting the relevant theory that formed the integrated theoretical framework used as an analysis tool.

Case studies are not confined to a single method of data collection, neither is it confined to a single case (Yin, 2009). For the purpose of investigating the roles of the MCS in banks, a multiple-case study has been chosen with two case companies and one interview with an expert in the banking sector. The reason for this is that, we believe the strategic approach to innovations will have a strong effect on the applied MCS of a specific bank, thus, a multiple-case approach will enhance the chances of capturing different issues related to the different strategies of each of the case companies. Thus, broadening the coverage of our potential findings. As Yin (2009) describes, extending the cases to more than one case can improve the quality of the research, and hopefully offer a more nuanced view of the banks' MCS. The limitation to two case companies is a consequence of decline from approached banks as seven banks were asked to participate. The interview with the expert in the banking sector is thought to bring valuable insights to the historical evolution of the banks MCS along with an executive perspective of the challenges that banks are facing when designing and determining the roles of their MCS. The two case companies offer primary insights on the current issues of their MCS.

2.2 Selection of Cases

As the purpose of this paper to investigate the roles of the MCS of banks, the selection of case companies was naturally quite limited as the banking industry in Sweden is confined to a low number of large banks. To fit our research question, the case companies were required to be large and mature enough to incorporate the traditional banking culture as described in the background. Information on Swedish banks was acquired by a search on the online search engine Google. Through this method, seven banks were identified as possible prospects for our research.

Due to the high risk of decline, all seven banks were approached via e-mail. The e-mail was sent to the banks' official e-mail addresses acquired from the banks websites. In those instances where the banks had specific e-mail addresses regarding student requests, those addresses were used, otherwise the e-mail was sent to the head office e-mail address. The same e-mail was sent to all banks, where we asked to gain access for interviews with representatives from functions involved in innovative and controlling processes. A positive response was received from two banks offering access to one representative each and a contact with them was initiated accordingly. The access was not optimal as only one representative from each case company was accessed. Our aim was to interview several respondents from each case company to get a more comprehensive view offering insights on the MCS from different perspectives, for example; controlling functions and innovative functions within the same case company. Unfortunately, we could only secure two interviews from the companies and the implications of this limitation will be discussed further in section 2.6.1. To complement the interviews, follow up

questions were sent via e-mail to the case company representatives to clarify any uncertainties. To complement the data collected from the case companies, an expert in the field was approached. The expert was selected with the help of guidance from our thesis supervisor who was well aware of the expert's credentials and positions within the Swedish banking industry.

2.3 Data Collection

The data for this research has been collected from multiple sources, particularly primary and secondary sources.

2.3.1 Primary Data:

The primary data is obtained from interviews and e-mail correspondence with key positions within either innovation or control functions in the two case companies. We have used semi-structured interviews in interviewing the innovation and control functions key personnel in the banks and the banking sector expert. Semi-structured interviews are commonly used for qualitative studies among other qualitative research methods (Alvesson and Deetz, 2000 cited in Qu & Dumay, 2011). This type of interviews enables the researchers to be flexible and intelligent in obtaining information that could be considered hidden as it is more related to the substance rather than the disclosed form. This can be related to the fact that semi-structured interview are based on conversation and interaction between the interviewer and the interviewee especially in how the latter perceive the subject under study (Qu & Dumay, 2011).

We have diversified the interviewees through interviewing both key personnel in controlling and innovation and digital development functions in order to understand the different perspectives. Moreover, In order to create a balance in our understanding, an interview was also held with an expert in the banking sector who has been involved in the controlling function and the oversight and approval processes of digital transformation initiatives through his executive roles in major banks in Sweden. It is worth to point out that all the interviewees have solid knowledge in management control and digital transformation initiatives in the banking sector. Where appropriate, we have explained the concepts of management control, innovation and other important terms used in the thesis with the interviewees in order to ensure that their comprehension of these concepts are in line with our understanding and use and to ensure that the different use of terminologies do not affect our results. It is worth to point out that the interviewees in the two case companies requested anonymity due to the sensitivity of their roles and the data disclosed. Therefore, the interviewees' positions, functions and employing banks are not named in this thesis; rather we will refer to the interviewees as representatives of Bank "A" and "B" respectively. It is also worth to point out that we have recorded and transcribed the interviews in order to obtain an appropriate understanding of the interviewees perspectives in the topics covered in this thesis. In addition, during the interviews, we have documented the key notes in order to assist us in the interpretation of the results. The outline of the conducted interviews is presented in the below table:

Interviewee	Form	Structure	Date	Duration	Location
Banking Expert	Face to Face	semi-structured	13 April 2016	90 min	Stockholm
Bank "A" representative	Phone	semi-structured	22 April 2016	30 min	-
Bank "B" Representative	Face to Face	semi-structured	26 April 2016	60 min	Stockholm

The questions for the interviews were developed based on relevant topics derived from the thesis developed integrated theoretical framework and the empirical data obtained from secondary sources. The interviews questions are presented in appendix 1.

2.3.2 Secondary Data:

Secondary data and document studies can be useful and less time and resource consuming than collecting primary data (Bryman & Bell, 2013). However, there are important criteria to consider when collecting secondary data. We have used the four criteria presented by Scott, (1990) cited in Bryman and Bell (2013), used to evaluate the quality of the secondary data: (1) Authenticity (2) Credibility (3) Representativeness (4) Meaning. The empirical secondary data used in this thesis consists of information utilized from reports, surveys and research conducted and published by major international consulting firms. Secondary data was also obtained from the case companies' web sites and annual reports. In order to meet the authenticity criteria, we have ensured that the documents used as secondary data are original and as published by their producers on their own websites. In addition, we have used the available documents published by the most recognized and reputable international consulting firms in the world to ensure that the criteria of credibility and representativeness are met. Finally, the meaning criteria was met through familiarizing ourselves with the used terminologies in the documents published while disregarding any uncommon definitions and terminologies.

2.4 Literature Review

The literature presented in this paper has been thoroughly selected to align with the purpose and problem of this thesis. The literature review is not mapping out general theory on the subjects under study in an exhausting all-inclusive manner but rather as a detailed description of the theoretical frameworks deemed as most relevant for our purpose.

The relevance of theories has been evaluated with the help of our initial empirical study of the changes and challenges in the banking industry. This has allowed us to narrow down our search for relevant literature to assure its usability in our analysis section. A number of scientific articles have been used on the theme of ambidexterity and MCS in regards to innovation. The basis for our integrated theoretical framework is literature on ambidexterity which lays a good foundation to our research, covering the balance and tension issues related to exploitation and exploration. However, the literature on ambidexterity does not offer sufficient theory on the specific role of the MCS to foster innovations. Therefore, the framework of Davila (2005) have been used to offer a more detailed and specific source on the role of MCS. Lastly, Simon's (1995) levers of control have been used to complement Davila (2005). Together, the above-mentioned theories form the integrated theoretical framework of this thesis.

2.5 Data Analysis

The data of our research will be analyzed with some of the techniques suggested by Yin (2009); pattern matching, explanation building and cross-case synthesis. Pattern matching will be used to compare theoretical anticipations with empirical patterns found in the cases (Yin, 2009). Cross-case synthesis will be used to compare the findings in each case to identify potential similarities or differences.

2.6 Limitations of Research Method

Although we have deemed case study as the most suitable method for our purpose, the method still has some limitations. The most common draw-back is the inability to scientifically generalize the findings derived from case studies (Yin, 2009; Bryman & Bell, 2013). Due to the in-depth nature of case studies such as this thesis, with low numbers of cases, the results may not be generally applicable to other organizations in the Swedish banking industry or organizations in other industries or countries. As our aim is not to offer an all-covering description of MCS in Swedish banks, but rather to highlight the issues that some banks are experiencing when designing and determining the roles of their MCS. We believe that the empirical findings from this case study still will be useful in broadening the collective knowledge base in the field of management control, despite the lack of ability to generalize our findings.

Regarding the collection of secondary data, we have taken the source into consideration as suggested by (Bryman & Bell, 2013). We have collected data from consultancy firms that have incentives to call for changes in any industry they are offering services for. Changes in the industry that increase the demand for consultancy services are of course profitable and desirable for the consultancy firms and we have taken this into consideration, through selecting reports, where possible, that were produced by those consulting firms based on the bankers and other concerned parties insights, inputs and experiences. Also, the emphasis of our analysis of the consultancy firms reports are on the suggested solutions rather than the described need for them.

2.6.1 Validity and Reliability

To assess the quality of the designed method, Yin (2009) suggests four tests; (1) construct validity (2) internal validity (3) external validity (4) reliability. The tests are important to evaluate the logical set of statements of any scientific research (Yin, 2009). We have conducted all four tests to our design. We have used multiple sources in our research, using both interviews and secondary data. However, we have only obtained primary data from one individual representative of each case company which can possibly affect the validity negatively making the individuals' subjectivity a significant factor.

To assure internal validity, we are using the suggested data analysis techniques suggested by Yin (2009) explained in the data analysis section. However, when conducting our pattern matching and cross-case synthesis it is important to keep in mind that the representatives from the two case companies are not holding similar positions. The comparability of the data collected from these individuals can therefore be negatively affected in the sense that they may not be derived from differences in the case companies but rather by differences in perspectives due to different roles. The collection of data has therefore been collected with an emphasis on case company-specific questions with the aim of not directly targeting the respondents' internal position.

External validity refers to whether the findings are generalizable beyond the case studied (Yin, 2009). In case of multi-case studies, the technique to assure external validity is to enable replication, testing the generalization on multiple cases. Our research is conducted in the Swedish banking industry which has some rather unique characteristics, such as banking regulations and corporate culture, which could negatively affect generalizations on organizations outside the banking sector.

The goal of reliability is to minimize the errors and biases of a study (Yin, 2009). This means that if another author were to conduct the same study with the same research design and same cases, he would arrive at the same results and conclusions. To assure reliability we have recorded all interviews and e-mailed follow-up questions when uncertainty arose when interpreting the data from the representatives. We have documented our procedures to enable repetition of our research.

3. Theoretical Review - Ambidextrous organizations, Innovation and Control

The purpose of this chapter is to provide the theories on ambidexterity, innovation and management control to develop the integrated theoretical framework. Section 3.1 provides an overview on exploration and exploitation activities. Section 3.2 provides the selected theory on structural and contextual ambidexterity. Section 3.3 presents the selected theory on innovation and strategic change and section 3.4 presents the selected theory on management control. Section 3.5 provides the developed integrated theoretical framework that clarifies the interplay between ambidexterity, innovation and control.

3.1 Ambidextrous Organizations

Most organizations face the challenge of searching and sustaining new business activities as they simultaneously grow and manage their core businesses (Chen et al. 2015). As mentioned in the introduction, this is argued to be the case for the large banks. A deeper understanding of the dynamics between these activities are therefore necessary to understand the issues that the banks may face as they incorporate a higher level of innovative activities in their organization. The following section will review literature on the theme of ambidexterity.

Oxford dictionary (2016) defines ambidexterity as the ability to use both the left and the right hand equally. "Ambidextrous organization" as a term was firstly used by Robert Duncan (1976) who suggested that organizations should change the structures to commence and implement innovation (O'Reilly & Tushman, 2013). Organizational ambidexterity according to O'Reilly and Tushman (2013) refer to organizations abilities to exploit and explore, compete in both mature and new markets and technologies in a manner that recognize the importance of efficiency, gradual improvements and control, and the need for experimentation, flexibility and autonomy. O'Reilly and Tushman (1996) argue that for organizations to be ambidextrous they need to be able to exploit and explore at the same time.

March (1991) examined the relations between the exploration of new opportunities and the exploitation of current certainties in the context of organizational learning. Exploration refers to the acquisition of new external and tacit knowledge (Chebbi et al. 2015), and can be described with terms such as; innovation, search, risk taking, experimentation, and discovery (March, 1991). Exploitation, on the other hand, refers to the utilization of existing and explicit knowledge (Chebbi et al. 2015), and can be described with terms such as, production, efficiency, refinement, implementation, and execution (March, 1991). The financial returns of exploration are different from exploitation in the sense that they are more uncertain and often with a longer time horizon. There is a tension between exploration and exploitation in the way that they compete for scarce resources, but both are necessary for the long-term success of a firm. An organization that conducts exploration and excludes exploitation will have too many underdeveloped ideas and end

up with the costs of exploration without gaining the benefits of it. On the other hand, organizations that only engage in exploitation are likely to end up in a suboptimal static state (March, 1991), as a result, organizational performance is linked to the ability to carry out these two activities simultaneously (Chebbi et al. 2015). As follows, maintaining an appropriate balance between exploration and exploitation is a crucial aspect of success for an organization (March, 1991). However, carrying these two activities simultaneously involves many paradoxes and conflicts (Andriopoulos & Lewis, 2010).

To manage these conflicting activities, the concept of organizational ambidexterity becomes relevant (Agostini et al. 2016). Ambidexterity can be described as being able to maintain high levels of two contradicting forces simultaneously, such as exploitation and exploration (Agostini et al. 2016). Because of the tensions between the two activities, organizations make explicit and implicit trade-offs between them. The explicit choices are expressed in the form of calculated decisions on investment alternatives and strategies. The implicit choices can appear in many different forms in the organization, for example; in the way firms construct procedures for accumulating and reducing slack, incentive programs, the way target and objectives are set, and policies for search activities (March, 1991).

3.2 Structural & Contextual Ambidexterity

The ambidexterity of a firm can be divided into two approaches; structural and contextual ambidexterity. Structural ambidexterity implies that the tension between exploration and exploitation are solved by dividing the different activities in separate organizational units (Agostini et al. 2016). The structural division enables some business units to engage in exploration activities while other business units focus on exploitation (Chebbi et al. 2015). Contextual ambidexterity occurs when managers are able to shape an organizational context with sufficient social support and performance management to encourage organizational members to use their judgment to prioritize between the different activities (Gibson & Birkinshaw, 2004). Contextual ambidexterity can be seen as an alternative approach to structural ambidexterity where the two activities are not divided in separate units, but instead, unit managers provide the context for individuals within a single unit use their discretion to choose between the two activities. In these units, all individuals can deliver value to existing customers in the current functional area but at the same time, every individual has their eyes open for changes in the task environment and acts accordingly (Gibson & Birkinshaw, 2004).

Another perspective is that these approaches should be seen as complementary alternatives that should coexist within an organization (Agostini et al. 2016). The contextual issues cannot be overlooked, even if an organization aims to solve the tensions by dividing exploitation and exploration there is a need for organizational support for both activities (Chebbi et al. 2015). In order to solve the tensions, an organization should be integrated around a culture

molded by top managers and linked to an all-encompassing structure and complementary context (O'Reilly & Tushman, 2008). In their article, Agostini et al. (2016) conceptualized ambidexterity in the context of balancing the tension between incremental and radical innovations. They found that structural and contextual ambidexterity can reinforce each other and conclude that a true ambidextrous organization combines both (Agostini et al. 2016). They also found a positive link between ambidextrous organizations and ambidextrous innovations (incremental and radical). Agostini et al. (2016) argue that for an organization to successfully solve the tensions between incremental and radical innovations, there is a need for both structural and contextual ambidexterity. Managers need to create the right context to stimulate problem solving and responsibility for objectives, but at the same time, design an organizational structure that separates exploration and exploitation activities. The combination of the two elements allows firms to have employees that are both well-focused (exploitation) and empowered with broad and challenging tasks (exploration) (Agostini et al. 2016). The separation of activities forces employees to communicate and exchange knowledge, thus overcoming the organizational functional barriers, resulting in both incremental and radical innovations (Agostini et al. 2016).

3.3 Innovation & Strategic Change

To be able to get a better understanding of the organizational tensions that makes ambidexterity relevant, it is necessary to investigate the characteristics of different types of innovations and their implication on an organization. Davila (2005) is highly relevant as he distinguishes between incremental and radical innovations as well as structural and strategic contexts. In exploitation activities, innovations are of the incremental type, and to engage in exploration activities there is a need for radical innovations (Chebbi et al. 2015).

Davila (2005) presents four types of processes that capture the effects of different types of innovation on strategic change, divided in the two dimensions, locus of innovation and type of innovation:

Table 1 Strategic concepts for MCS

	Type of innovation defining strategic change	
	Incremental	Radical
Locus of innovation		
Top management formulation	Deliberate strategy	Strategic innovation
Day-to-day actions	Emergent strategy / intended strategic actions	Emergent strategy / autonomous strategic actions

Table 1. Source: Davila, 2005 p.42

The locus of innovation defines if the innovation derives from top management or throughout the organization. The type of innovation defines the innovations effect on strategy which is either incremental or radical. Incremental innovations modify the current strategy while radical innovations redefine the future strategy (Davila, 2005).

The concept of strategy was explained as a linear process with formulation, followed by implementation (Andrews, 1971 cited in Davila, 2005). The role of the MCS was confined to the implementation stage as changes in strategy were designed at the top of the organization in the formulation stage. Since then, the concept of strategy has evolved and now includes different aspects. Strategic change is no longer thought to be an isolated event at the beginning of the process but rather to be an internal evolutionary process where formulation and implementation occur simultaneously (Davila, 2005). This process results in a realized strategy which is a combination of deliberate and emergent strategies. Emergent strategies reflect the impact of innovations that occurs throughout the organizational levels to adapt to contingencies. The introduction of Simons' levers of controls (see section 3.4) made MCS relevant for managing the emergent strategies and MCS was no longer confined to the implementation stage. Further, the evolutionary perspectives advanced to define innovation in strategy not only occur within the existing business model but also to redefine it (Davila, 2005).

The innovations that incrementally changes the organizations current strategy derives from competencies that already exists in the firm or is relatively easy to acquire. This is because they move within the existing business model or technological realm of the firm. This puts relatively low demands on organizational or industry changes and involves lower risks and returns (Davila, 2005). On the contrary, innovations that radically redefines an organizations future strategy is associated with high risk and returns and shifts the organizational power structures, changes the relevance of core competencies, and requires redesign of competitive strategy (Damanpour, 1991).

3.3.1 Davila's Model of MCS for Innovation Strategy

Davila (2005) developed a model that defines MCS role within the context of how innovation gets embedded in the strategy of an organization, i.e. the strategic approach to innovations and its implications on the role of the MCS. The model takes into consideration, different types of innovations and different ways for innovation to emerge. Further, the model defines the MCS role and the organizational context in which it operates:

Table 2 A model of MCS for innovation strategy

Components of strategy	Organizational context	MCS role
Current strategy		
Deliberate strategy	Structural context	Support the execution of the deliberate strategy and translate it into value
Induced strategic actions	Structural context	Provide the framework for incremental innovations that refine the current strategy throughout the organization
Future strategy		
Autonomous strategic actions	Strategic context	Provide the context for the creation and growth of radical innovations that fundamentally redefine the strategy
Strategic innovation	Strategic context	Support the building of new competencies that radically redefine the strategy

Table 2: Davila 2005 p.47

In his model, Davila (2005) identifies four components of strategy; (1) executing deliberate strategy (2) guiding induced strategic actions (3) crafting autonomous strategic actions (4) building strategic innovation. How the MCS vary between these four roles will be presented in the following sections.

Executing deliberate strategy

The main role of MCS, when executing deliberate strategy, is to support the translation of the strategy into action, monitor their execution and identify deviations. In this role, the MCS enhance efficiency but can possibly limit the organization's ability to innovate. The limitation of innovation is not automatically a negative feature. Innovation can be unwanted in some environments where operating procedures are standardized and the MCS specify every action in every contingent stage to mitigate the risk of deviations. In these standardized procedures, MCS deliver consistency and reliability, specify how to carry out procedures, identify deviations and inform how to deal with them (Davila, 2005). In these environments, efficiency and mitigation of risk is prioritized and MCS prescribe the actions that organizational members should take. The boundary systems of Simons (1995) (see section 3.4.4) are highly relevant in these environments, for example, codes of business conduct that specify specific risks to be avoided, often blocking

innovation to avoid risk. Diagnostic systems are also an important tool in these environments in the sense that management relies on MCS to monitor and capture subordinates deviations from expectations within the boundary system (Davila, 2005).

Another part of the diagnostic system is goals and targets, where the purpose is motivation rather than monitoring. Here, innovation is not necessarily blocked but the diagnostic systems do not capture them as they are disregarded. Budget is a common MCS where targets are used to compare with performance. These types on controls are outcome oriented and do not specify actions, sales targets are an example of this. In these cases the MCS control the action of the organizational members by measuring the consequences of their actions. Efficiency and speed is the values in these systems at the expense of organizational learning and innovation. Therefore, these systems are only effective in mechanistic and stable environments. If these systems are extensively used in environments that require innovations, MCS become coercive and dysfunctional with short-time focus on the expense of long-term success. This does not make these systems un-useful, the use of this role is still crucial to translate innovation into value and can be used to execute current strategy as a complement when organizations use other MCS to guide the emergent strategy or form a radically new one (Davila, 2005).

Guiding induced strategic actions

When environments are dynamic, with changes that require innovative solutions that cannot be found in the codified knowledge, MCS can be constructed to capture the learning that happens in these circumstances. As opposed to the MCS that execute current strategy which ignores learning as noise, systems that guide induced strategic actions code and conceptualize these experiences to improve execution (Davila, 2005). In this role MCS facilitates interaction between day-to-day actions and deliberate strategy as MCS are used to integrate the incremental innovations to the current strategy. In this role, deviations from manuals or conduct codes are not automatically negative and in need for corrective actions. Deviations can also be seen as opportunities for learning and improving manuals and processes. Hence, MCS are not only used for execution but also to capture learning and to facilitate improvements. This role replaces some of the coercive features of explicit coded knowledge by including teams in periodical evaluations of processes, embracing improvements by refining existing organizational processes. As an example, Davila (2005) uses quality circles as an example for these systems. Organizations use quality circles to gain competitive advantage through incremental innovations by forming teams which sole purpose is to improve existing processes. In product development, MCS can be designed to establish the infrastructure to facilitate feedback mechanisms with customers through prototyping or market research. The key value in these systems are knowledge as they bring knowledge to the organization to stimulate innovation (mainly incremental), and eventually translate this knowledge into products. In this role, as a part of the enabling bureaucracy, MCS facilitate ongoing communication between the current knowledge pool and the current experiences of employees (Davila, 2005).

The MCS are a part of the structural context in the way that they are responsible for moving the current strategy forward by encouraging the organization in search activities. These search activities are in most cases confined by the framework that the strategy defines, typically resulting in incremental innovations. The innovations are mainly incremental, and not radical, because of the fact that the knowledge, captured by the MCS, is mainly in the context of the organizations' current business model, resulting in discussions closely related to existing strategy (Davila, 2005). He refers to Simons' interactive systems as a part of this role (see section 3.4.1), where top managers use interactive systems to involve themselves in the decision activities of subordinates and stimulates discussion regarding the strategic contingencies of the current business model. The difference between enabling bureaucracies and interactive systems is that interactive systems are defined at the top management level with the purpose of making the strategy more robust to uncertainties, capturing incremental innovations associated with the formulation of strategy (Davila, 2005). According to Davila (2005), this makes interactive systems more suitable for incremental innovations.

Crafting autonomous strategic actions

Compared to incremental innovations, autonomous strategic actions radically change the future strategy of an organization. They can take place at all levels of the organization at any point of time and the path from idea to value creation is a less structured process. Radical innovations are outside the current strategy and because of that, they are managed through the strategic context as opposed to the structural context (Davila, 2005). Organizations that aspire to follow an aggressive innovation strategy are in need to establish the appropriate environment to generate variation to select among essentially different options and structure the organization to create a new business (Barnett & Burgelman, 1996). In this context, culture has, deservedly, received significant attention, but formal systems are still relevant in these uncertain settings. Organizations still need to organize, motivate, allocate resources, intervene if necessary, and capture learning (Davila, 2005). This can be supported by Chenhall and Moers' (2015) claims that formal controls can be used to foster innovation as studies have shown that prescriptive formal controls are used in more subtle forms than cybernetic financial planning models. This can be performed through SWOT analysis and examining internal capabilities, formal controls can increase the innovative potential by identifying areas of the business that are likely to produce innovation (Chenhall & Moers, 2015).

According to Davila (2005), MCS in this role are almost the opposite of MCS in traditional systems. Here, they encourage organizational members to question, experiment, and explore outside the current strategy and can be implemented proactively to define the strategical context. Simons' belief systems are one approach to create the environment with these types of characteristics (Davila, 2005). Simons' (1995) belief systems establish a structure built upon explorations and experimentation (See section 3.4.3). Examples to facilitate radical innovations are interest groups, external collaborations, and slack in recourses that permits experimentation (Davila, 2005). Further, these systems enable exchange of information in the way that ideas with

potential are identified and supported (Davila, 2005). The concept of innovation hubs are another example of formal systems (Leifer et al. 2000).

The MCS regarding resource allocation differs in the strategic context compared to traditional MCS in the structural context. Due to the high risks, uncertainties and time horizons, radical innovations appears less attractive than, for example incremental innovations, when applying traditional financial criteria. Radical innovations require a funding process with higher level of qualitative measures, reliant on expert judgments with characteristics that resemble venture capital investments (Davila, 2005). Another key difference between radical and incremental innovations is the process of integrating the innovation into the corporate structure (Burgelman, 2002 cited in Davila, 2005). In the case of radical innovations, the process is not confined to implementing the innovation into the current organizational structure, the innovation may very well redefine the entire organization, become part of a joint venture, or become a separate business unit (Chesbrough, 2000). Whatever the transition may be, it must be carefully managed, especially if the innovation is to be integrated, and MCS can help by planning, training, and providing incentives (Davila, 2005).

Building strategic innovation

Radical innovations are often derived from top management, in some cases, these managers are entrepreneurs and the organizations are formed around their ideas. Another scenario is that managers recognize the demand for radical change and formulate a responding strategy (Davila, 2005). Either way, strategic innovations evolve from a process of formulating a strategy at top management level which radically changes the current strategy. Unlike the previous role, where radical innovations are nurtured at all levels of the organization, the dimension of strategic innovation supports top management in formulating strategies that build upon radical strategies. Both dimensions redefine the corporate strategy and the structural context, what sets them apart is the origin of the innovation and the process of innovation. MCS that nurture incremental innovations can also be relevant for building strategic innovation. As they supply information on strategic uncertainties, these systems examine ways in which the current strategy can evolve (Davila, 2005).

The MCS that are used to refine current strategies can also, by detailed analysis, be used for radical changes of strategy (Davila, 2005). Balanced scorecards are used by Davila as an example of MCS that can be relevant for both incremental and radical innovations. In the context of Simons' levers of control, balanced scorecards have both monitoring and interactive features (Davila, 2005). Even though balanced scorecards rely on the current strategy, the interactive features of the balanced scorecards let the user identify opportunities for both incremental and radical changes in strategy. Even budgets and systems for strategic planning can be useful in this dimension in the way that they capture and transfer ideas through the organization. In the dynamic soundings of this dimension, top management needs extensive information about their

environmental circumstances. MCS can help top managers to closely monitor and keep them informed about developments in the business environment and capture business opportunities derived from changes in regulation, changes in customer needs, the emergence of new markets, and new technologies. MCS can broaden management's information network beyond the limited informants of informal networks (Davila, 2005). Although learning is also relevant in building strategic innovations, the process differs from incremental innovations. When building strategic innovations, there are no plans framed by explicit knowledge. Instead, the learning process is proactively managed by the MCS and provides the motivation for evolving new knowledge and skills and provides the required recourses. Further, as learning evolves, the MCS provides measures to adapt the new business model and structures two-way communication between vision and action with periodic meetings and deadlines to evaluate progress to make sure that the project is on track (Davila, 2005).

Moreover, Forés and Camisón (2016) have examined incremental and radical innovations and their dependency on knowledge accumulation; they show that firms' dynamic capabilities rely on the firms underlying accumulation of knowledge. A firm can accumulate knowledge and generate it internally through the skills, knowledge and experience of their employees (Smith et al. 2005). An organization can also accumulate knowledge through external sources by developing absorptive capabilities, or organizations can use a strategy for accumulating knowledge by combining the two alternatives (Forés & Camisón, 2016). Creating capabilities for internal knowledge consists of constructing an internal system that allows members of the organization to generate, transfer, and integrate new knowledge within the boundaries of the. The internal knowledge is derived from innovative activities such as problem solving and experimentation, and the internal knowledge stock is widened through internal communication between organizational members from different functions, combining knowledge in new ways in the form of teams or project groups. The formation of teams, with members from different functions, spreads knowledge in the organization, helps to minimize misunderstandings between units and helps to create a common language and shared vision for future development. Teams can be used as an effective tool to integrate knowledge in the organization that can be applied to different situations assuring constant strategic renewal.

Forés and Camisón (2016) found that both internal knowledge creation and absorptive capabilities have a positive effect on incremental innovation performance. They also found that radical innovations are only positively affected when firms combine their internal knowledge base with external sources. Further, they claim that internal knowledge creation capabilities can strengthen a firm's established position by maximizing their current knowledge base. This will help firms to sustain their competitive advantages in the short term and in stable environments. However, to create long-term competitive advantages, in more competitive environments, firms should create new products, processes and management techniques (Forés & Camisón, 2016). If these innovations are to be radical, firms need to invest in their capabilities to absorb external knowledge (Lavie, 2006). Forés and Camisón (2016) stresses the importance of transformation

capabilities to combine the existing knowledge base with newly acquired external knowledge, thus, creating a more tacit and unique knowledge base that is not easily imitated by competitors.

3.4 Simons' Levers of Control

Simons Levers of controls framework highlight the tensions between organizations need to achieve their objectives and their need for innovation. The framework also presents the opposing forces between the different MCS that should be managed by the organization in order to meet these needs (Bisbe & Otley, 2004; Bisbe & Malagueño, 2009). The tensions between these needs can be dealt with through positive and negative MCS. Positive MCS focus on motivation, direction, rewarding and promoting development and learning similar to what Ahrens and Chapman (2004) identified as enabling control systems while negative MCS focus on controlling, disciplining and restrictions similar to what Ahrens and Chapman (2004) identified as coercing control systems. The presence of the two types of MCS is essential for organization in order to ensure that the MCS are designed and implemented effectively. In order to manage the tensions between the needs and the opposing forces; four levers of control have been identified by Simons. While two levers of controls can be described as negative MCS; the diagnostic control systems and boundary systems, the other two levers of controls can be described as positive MCS; the belief systems and the interactive control systems (Tessier & Otley, 2012).

In nowadays business environment; diagnostic, boundary, belief systems and interactive control systems are of equal importance. Each lever has a purpose that can be used by managers in utilizing employees' creativity and innovation. Diagnostic control systems provide a guarantee for the managers that the organization objectives will be achieved in an efficient and effective manner. Belief systems act as an empowerment tool through communicating the values to the employees to commit to the organization goals and to seek new opportunities and initiatives. The boundary systems set the rules and boundaries that should not be crossed by the employees in addition to the risks that should be avoided. The interactive control systems provide top managers with the space to focus on the strategic uncertainties, to learn about threats and opportunities and to be proactive in their response to the business opportunities and threats (Simons, 1995).

The needs of innovation and meeting the organizations objectives can be achieved through the effective use of the four levers of control collectively (Bisbe & Malagueño, 2009). According to Simons (1995), these four levers of control support each other, and therefore the effective use of such controls will solve the tensions and provide a reasonable assurance to organizations managers that innovation and creativity are achieved while appropriate control over risk is maintained. The following sub-sections describe the main characteristics of the four levers of control:

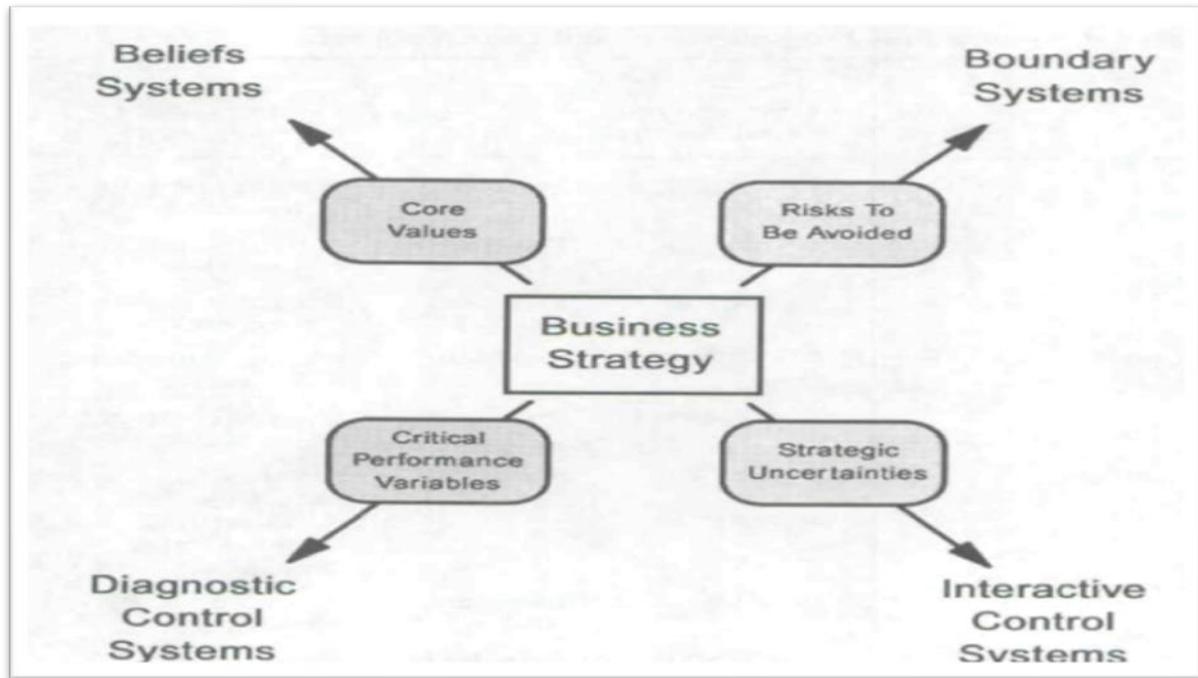


Figure 1: Four Levers of Control

(Source: Simons 1994, p.173)

3.4.1 Interactive Control Systems

Interactive control systems are the formal tools with which organization management involve in the decisions of the employees through regular personal contact (face-to-face meetings, periodic meetings, weekly and monthly reports, project management systems, intelligence systems). These systems encourage debate and dialogue and information sharing and exchange among all the levels in the organization and enable organization management to participate in the decisions of the employees while focusing on the strategic aspects of the organization. Among the strategic aspects are the strategic uncertainties (changes in regulation, customers' demands, and technology transformation) that might have material impact on the organization survival and business performance. Interactive control systems have four key characteristics that distinguish this lever of control from the diagnostic control systems. These four characteristics are the focus on the changing data considered strategic to the organization, the need to communicate this data to all levels in the organization, the best tool to communicate and exchange this data through face-to-face arrangements and finally such systems motivate the regular contacts and interaction (Simons, 1995, 2005).

3.4.2 Diagnostic Control Systems

Organizations' managers rely on diagnostic control systems in monitoring and following up on the progress of the employees and business units in relation to the targeted objectives.

Examples of the diagnostic control systems are the use of budgets, profit plans, goals plans, balanced scorecards, monitoring systems and variance analysis reports. This can be performed by comparing the actual to the targeted results on regular basis which helps managers in identifying and correcting deviations from the standards and to avoid them in future business. Reducing management burden is one of the main objectives of the diagnostic control systems as employees' performance targets and related rewards are set, therefore, managers can focus on other important aspects of the business. However, diagnostic control systems may not be adequate in terms of control effectiveness especially when the performance goals or targeted results are demanding or not realistic. This might lead to manipulation and control failure resulting from employees' attempts to minimize the deviations between the targeted and actual results (Simons, 1995, 2005).

3.4.3 Belief Systems

Belief systems are positive control systems that encourage the employees to seek opportunities. Organizations use belief systems to communicate and inspire their core values, purposes, mission and principles to the employees. These systems are designed to outline the acceptable norms and behaviors and are formulated in broad terms in order to cover all the groups in the organization. These systems point out the key messages for employees considered important for the organization business conduct such as value creation, minimum performance levels and internal and external relationship management. The growing size and complexity of organizations, the fierce competition at the global level, the ongoing changes in information needs and technological shifts shape the environment of nowadays business and make it hard for employees to perceive the purposes and the directions of their organizations. Therefore, the effectiveness of these systems depends on the way in which employees perceive that the values are in fact, upheld by the organization management. However, the broad and inspirational nature of these systems make it hard to use them as standards to measure performance which necessitate the need to use other levers of controls (Simons, 1995).

3.4.4 Boundary Systems

In contrary to belief systems, boundary systems are negative systems that restrict employees' pursuit to opportunities seeking. Organizations, within defined limits based on identified risks, can turn their employees to innovative and creative assets through accountability and delegation mechanisms and communicating "what not to do" instead of telling them "what to do". Boundary systems are viewed as minimum standards to limit the negative or inappropriate behaviors of employees in their pursuit of achieving challenging results especially in the modern complex organizations. Examples of these systems are the codes of professional conduct, non-disclosure and confidentiality agreements. These systems are highly important especially in organizations that depend heavily on trust to maintain their image and reputation (Simons, 1995).

3.5 Development of the Integrated Theoretical Framework

The theory section started by presenting literature on ambidextrous organizations and presented the theme for the integrated theoretical framework of this thesis; balancing and solving tensions between exploration and exploitation. Ambidexterity is divided into two approaches; structural and contextual ambidexterity. Structural ambidexterity implies that an organization divides and structurally separates activities devoted to exploration and exploitation. Contextual ambidexterity occurs when there is the right managerial, cultural and organizational support for both activities. In the framework for this thesis, contextual ambidexterity is used, not only as referring to the support for individuals to prioritize between the two activities, but also as a complement to structural ambidexterity as the right cultural and organizational support as suggested by (Agostini et al. 2016). This organizational support includes the suitable design of MCS. Theory on ambidexterity provides valuable insights on issues such as contextual or structural approach (Chebbi et al. 2015; Gibson & Birkinshaw, 2004; Agostini et al. 2016) but do not offer sufficient theory on the role that MCS can play in the process of being an ambidextrous organization. There is a need to frame and conceptualize the role of the MCS in a comprehensive way in order to conduct research on the role of MCS in being an ambidextrous organization. Davila's (2005) typology on the role of MCS in regards to incremental and radical innovations fills this void in theory on ambidextrous organizations. In regards to innovations, exploitation can be translated as engaging in incremental innovations, and as follows, exploration can be interpreted as conducting radical innovations (Chebbi et al. 2015). By adopting this interpretation, we are establishing a link to the typology of Davila (2005), thus, offering a connection between ambidexterity and the role of MCS in regards to different types of innovations.

Davila's typology offers detailed and comprehensive insights on the role of MCS on both radical and incremental innovations. Depending on the different types of innovations and strategic approaches, the MCS adopt different roles with different purposes. This implies that organizations should take their strategic approach to innovations into consideration when designing their MCS. By including Davila (2005) in the theoretical section, this paper offers the theoretical base for how the MCS could be designed to adopt the required role to support the different types of innovations, and in extension, enable organizations to become ambidextrous. As ambidextrous organizations are required to engage in both exploration and exploitation activities simultaneously, the MCS would not be able to control and support both activities optimally unless it is able to adapt and take on the different roles suggested by Davila (2005). The ability for MCS to adapt to these different roles is a form of ambidexterity in itself and it implies that an ambidextrous organization is in need of an ambidextrous management control systems.

Lastly, Simons' (1995) "Levers of control" has been included as a part of our integrated theoretical framework. While theory on ambidexterity focuses on the approach for organizations

to become ambidextrous, and Davila (2005) sets innovational strategy and the role of the MCS at the center, Simons' (1995) offers the last piece to the puzzle by putting the focus on the collective use of specific management controls by elaborating on the behavioral aspects of these MCS i.e. the way in which designed MCS affect and steer the behavior of organizational members. Davila (2005) refers to Simons' (1995) levers of control in his typology when describing the roles of the MCS. Better understanding of Simons' (1995) levers of control can add value to the understanding of the characteristics of the different roles of the MCS as suggested by Davila (2005). Thus, Simons' (1995) levers of control are included in the framework of this thesis. The balance between the different levers of controls changes as the MCS take on the different roles suggested by Davila (2005). For example, when executing deliberate strategy there is an emphasis on diagnostic controls and boundary systems, and when an organization peruses radical innovations, the levers “Belief systems” and “Interactive controls” become more prevalent as the MCS adapt a different role. The three areas combined form the integrated theoretical framework for this thesis that used as a base for our empirical research and analysis. The following graph depicts the developed integrated theoretical framework:

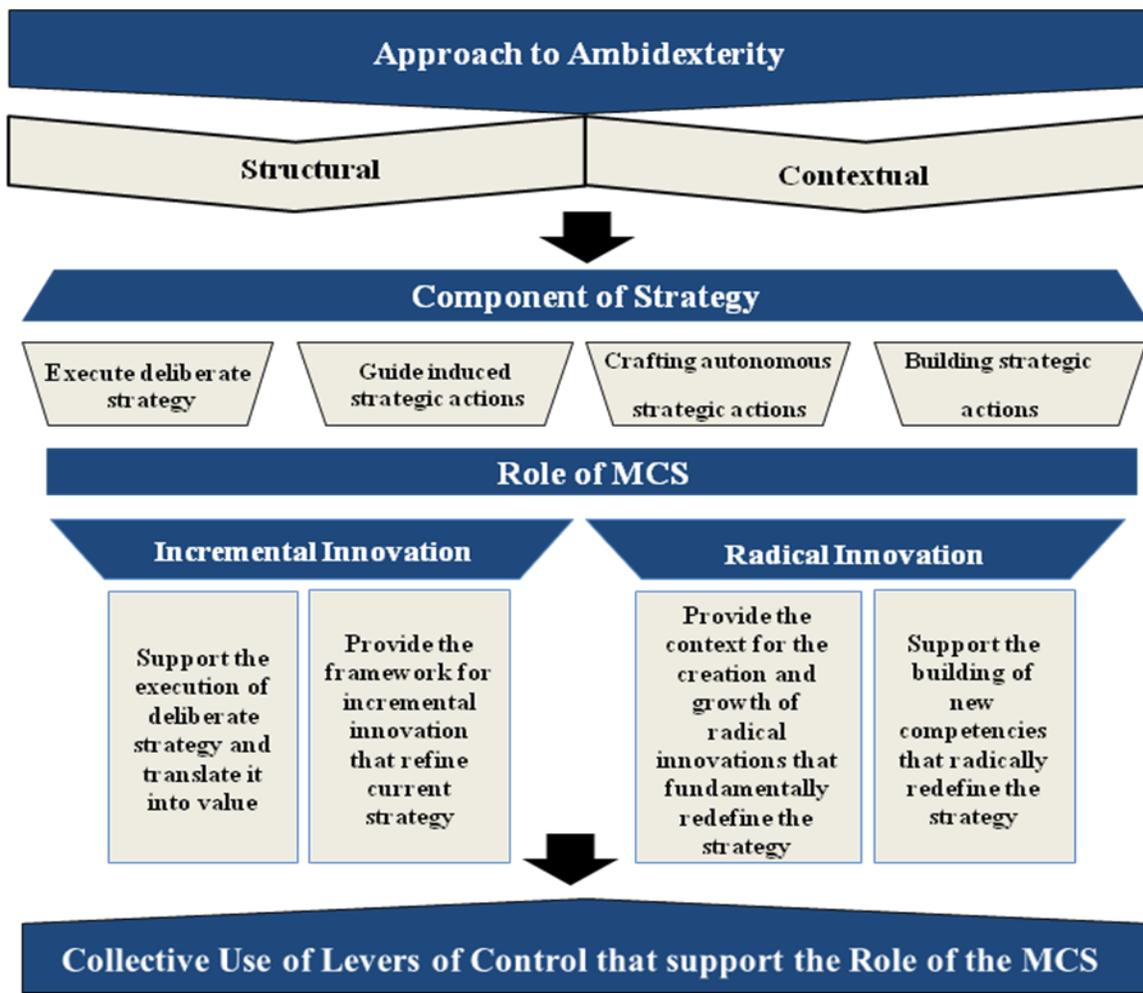


Figure 2: The Integrated Theoretical Framework

4. Empirical Findings

This purpose of this chapter is to present the empirical findings. Section 4.1 presents the empirical secondary data obtained from the studies, reports and surveys conducted by the international consulting firms on the topics of innovation and management control in the banking sector in general. Section 4.2 presents the empirical primary data derived from the interview with an expert in the Swedish banking sector. Section 4.3 provides the results and the empirical primary data obtained from the interviews with the representatives in the case companies.

4.1 Digital Transformation in the Banking Sector

Innovation, balance, control, and legacy in the banking sector and their digital transformation initiatives have been broadly covered by reports, surveys and research published and conducted by major international consulting firms across the globe. The majority of these studies covers three important aspects; the current state of the banking sector in terms of digital transformation, the key forces and challenges in the current state and the roadmaps for the future state of the banking sector. Such coverage suggests the widespread and importance of tackling this topic at a global scale for one of the most critical business sectors. In addition, such coverage highlights the evolving interests of many key players in today's business environment, particularly in relation to innovation in banking digital transformation.

4.1.1 The Current State of the Banking Sector

The 2015 World Retail Banking report published by Capgemini and Efma, provides insights on customers' experiences with the banks. The report suggests that customers of the retail banks have variety of options in relation to their financial and banking choices than they ever had. This in turn hardens the banks' mission to meet customers' demands and expectations. The report points out that banks are lagging behind in terms of investment in digital transformation initiatives in their middle- and back-office activities as compared to their initiatives in the front office activities. According to the report, this creates negative customer experience and inability to retain and attract customers. The report also claims that banks' initiatives to enhance services are not in line with customers' expectations and demands. They are unable to exploit customers' behaviors in a manner that can reduce costs or improving profitability through obtaining additional referrals from their customers or through making customers buy additional products. The report also suggests that although there are high usage rates of mobile and internet by the customers of the banks, banks are still failing in directing their customers to those channels instead of their branches. The research in the report shows that Banks' attempts to decrease their costs through setting low-cost digital tools to replace branches have not persuaded customers that these new channels and tools provide them with the same quality service that they can obtain from the branches. This applies on the simple products offerings such as current accounts and credit cards as customers prefer to undertake the application process in the branches. According to the report, this contradicts with the banks' desires that their customers use their branches for

complex products and service offerings such as personal loans and mortgages (Capgemini & Efma, 2015).

Tunde Olanrewaju a principal in McKinsey's London office argues that retail banks in Europe should move online as customers are becoming more online oriented. According to Olanrewaju, most of the banks are not adaptive to this new orientation as only 20 to 40 % of the retail banks' processes in Europe have been digitalized. In addition, the total investment of 90% of retail banks in Europe in digitalization account for less than 0.5% of their total expenditures with focus on shallow digital initiatives directed toward basic customer transactions (Olanrewaju, 2013). In a study conducted by IBM (2010), other insights are presented in relation to balance between innovation and traditional practices and triggers of innovations in the banking and insurance sectors. According to the study, insurance and banking sectors have strived, in the last centuries, to create a balance between a stable innovation and traditional practices with a result of compromising innovation. The incremental innovations initiatives that were considered sufficient in the past are not sufficient in the current dynamic business world. For the banks and insurance sectors to exploit innovation in this dynamic market, there is a crucial need to understand their current competencies and resources in order to be innovative. According to the study, customers' trust in the financial services sector is at the lowest levels and customers do react to agility and adaptability. Moreover, innovation initiatives in the banking sector do exist and vary from small initiatives to large transformations, however, the main type of innovation currently being pursued by the banking and financial services sector can be characterised as incremental innovation (IBM, 2010).

The importance of innovation as the most critical factor to create sustainable growth for the banks is also discussed by PwC report: "Retail Banking 2020 Evolution or Revolution?" (2014a). According to PwC report (2014a), banks are not viewed as innovative organizations and not preferred by innovators and competent software developers as a work place. In another report published by PwC (2014b) on innovation for financial institutions and banks. The report contained a framework with suggestions on how banks can become more innovative. The framework is based on the notion that banks are lagging behind in regards to innovations, especially radical innovations, or breakthrough innovations as referred to in the report. The report highlights some of the experienced issues in the banking sector such as regulations and failure to execute ideas. The report suggests that Banks have had a strong focus on preparing for future compliance. As a result, they have minimized their investments in innovative initiatives out of the concern over the potential impact that innovations or business changes might have on their regulatory standing. The report also points out that some of the banks have spent significant resources on innovations but less time on determining how to execute them, resulting in the failure to implement several ideas. One problem is that innovative initiatives are being carried out in silos with weak link to the rest of the business. Another problem is that banks lack the required tools and skills on market research and prototyping to implement innovative ideas.

4.1.2 Key Forces and Challenges in the Current State

PwC report (2014a) suggests that Banks have the tendency to be careful and they are bureaucratic with many suffocating levels and layers of control and oversight. In addition, PwC report (2014a) presents the main the challenges that will reshape the future of the banking sector. The forces to change arise from customers' expectations, technological advancements, economic forces and regulatory demands. The report also suggests that the non-traditional competitors who are equipped with innovation directed to customers, the emergence of new players and the low level of trust in the banking sector are other forces that will reshape the business model of the banking sector. Capgemini and Efma report (2015) suggests that traditional banks are burdened with their legacy systems and obsolete ways of conducting business and therefore they are facing struggles in keeping up with the new competition of non-banks who have started to offer simple, flexible and cheap financial services and products. The report describes the advantages of these new players and describes them as equipped with agility, technological leverage and capabilities among other strenghts not possessed by banks. These include their ability to interact and connect with their customers through digital touch points.

According to the report, these strenghts enable those non-bankers to meet customers' needs and expectations. The report provides examples of those non-bankers mainly the FinTech companies who craved out shares from the banking sector especially in payments and credit cards areas. According to the report, Banks perceive the threat from the FinTech companies and acknowledge that customers' desires and expectations are met by these providers more than the banks and expect that those providers will pose a higher threat in the future. Banks also acknowledge that these non-bankers can use their innovative capabilities to "re-invent banking in brand- new ways" Capgemini and Efma report (2015, p.23) with clear advantage over banks which is lack of legacy systems that slow down the business. The report also suggest that Banks are facing these challenges through establishing venture capital funds in order to invest in this prospering sector, setting incubation programs for such companies and acquisitions. Banks have referred to the slowness and challenges to in the digital transformation of their front, middle and back offices to a variety of factors that include costs as the main factor followed by drive and priority of the organization. Other challenges were integration challenges, regulations, employees' dormancy and unclear ROI.

Olanrewaju (2013) suggests many reasons that can be related to the lack of adaptability of "digital transformation" the in European banks. One reason is their narrow scope or view of the digital transformation where banks' management view digital transformation activities as standalone initiatives that focuses on enhancing the features of the digital services of mobile applications and online product offerings. Another reason is related to risk avoidance and security related issues pointed out by banks, however other service sectors such as the airline industry which can be characterized also with higher risk concerns has managed to digitalize most of the aspects of the customer experience without compromising security and safety.

According to IBM (2010), the availability of technology is considered the trigger for all radical innovations such as the launch of the internet banking. The triggers of incremental innovations are usually internal factors from within the organization. Rules and regulations, customers, internal processes and other external influences are other triggers of innovation. Regulations are usually viewed as an obstacle to innovation. However; regulations can foster innovation through; forcing the banks in adapting improvements that can be important or value adding, create new business models by taking advantage of the new regulations and obtaining a competitive advantage by those who are able to think outside the box and counter the traditional thinking. External influences emerge from learning from other sectors or countries new ideas and developments to foster innovation. Meeting customers' desires and expectations is also an important trigger of innovation. Finally, the internal influences is the main trigger for innovation in the banking sector which can be characterized as incremental innovation. This results from the desire to enhance the efficiency of the internal processes with an objective to utilize the resources efficiently. According to the study, the reason why the banking sector is perceived to be non-innovative is its reliance on the internal influences as the main trigger of innovation. This reliance is considered reactive and may not create balance between what should be done and what is actually being implemented.

4.1.3 Roadmaps for the Future State

Capgemini and Efma report (2015) suggests a roadmap for the banks to counter the challenges, particularly in the middle and back offices. The roadmap focuses on digitalization (reducing manual processing with automated ones), simplification/agility (simplifying the numbers of systems and enhance integration to address legacy and silos and enhance agility) and insights and data (adequate data management systems). The report acknowledges that the process of digitally transforming the core banking system is complex and requires high investments by the banks. Therefore, the roadmap suggests prioritization of solutions in order to avoid risks of replacement. The report relates the main challenge in this process for the banks to the ability to integrate the obsolete legacy systems with new customer oriented systems with a focus on the value and outcomes not the technology itself.

Olanrewaju (2013) acknowledges that major investments will be needed in some aspects, however digital transformation does not mean substantial capital investment in IT. The idea is to exploit many elements of what is already in place within the banks with a tendency to leverage them in a better way. This can be achieved by maximizing the utilization of the existing technology as banks already have workflow systems, software, interactive response systems and other technologies; however, they are not used broadly and well enough. Therefore, he suggests that banks need to assess the existing capabilities and their usage and adoption obstacles. Moreover, Banks can apply technology interventions more efficiently without the need for major investments. This can be achieved through joint multidisciplinary teams to ensure user-friendly and risk-mitigating processes are in place with less manual involvement. He also emphasizes that

digital transformation is not only about the amount of technology employed in the process. Success of these initiatives requires reconsidering the organizational model not only reconsidering technology. The reconsideration of the organizational model covers other important aspects that can lead to the success of such initiatives, particularly in relation to competence, skills, organizational structure, performance management and incentives. Therefore, he advises Banks to establish the right structure, align incentives and foster collaboration and adoption. Olanrewaju (2013) also presents how banks are approaching digital transformation. Some banks establish digital development department as a profit and loss center and appoint a head for the department or unit, while others establish a center of excellence to develop product offerings that other business units can obtain and deploy. He agrees that the two models might work, however, the focus shall be on aligning incentives and fostering collaboration. He argues that establishing a center of excellence without business targets might lead to building technology in a successful manner without effective adoption, in addition adapting digital initiatives with an inappropriate functionality may bring excitement for the management of the banks for having a new digital initiative but with no impact on the bottom line level.

Moreover, Olanrewaju (2013) also argues that banks need to shift their focus to the business outcomes of the digital development rather than addressing the digital activity as a standalone activity. Some banks measure the performance of their digital transformation activities by focusing on the metrics of the activity such as the times of app downloads and the frequency and rates of log in, however, these metrics are inadequate in terms of assessing the value for business. Accordingly, he suggests that banks need to set clear metrics to assess accurately the outcomes or values for business generated from the digital activity such as reductions in units' costs and enhanced productivity. In addition, Banks should also focus on implementing a vision for the roles and responsibilities of the employees in the digital transformation initiatives. This includes formulating expectations on the levels of intervention and the competencies that should be developed by the employees to achieve the outcomes of the digital activity.

Further, Olanrewaju (2013) acknowledges that, digital transformation will drive out some roles and some positions which could be viewed as a threat to some employees which may in turn forces them to resist the change of the digital transformation. Therefore, banks' management need to raise the awareness of the employees, assess their competence and technical capabilities and the way in which they can affect the digital initiatives to be able to successfully implement digital transformation initiatives. This is vital, as banks cannot rely only on recruiting talent from digital sector (i.e. start-ups acquisitions) although this provides new opportunities but digital awareness should be a new competence throughout the Bank. IBM report (2010) shares similar views and argue that innovation is not a function; rather innovation should be embedded throughout all aspects of the banks and in their corporate culture. The key is to start with the right attitude towards innovation and to utilize the right tools and techniques to foster innovation.

According to PwC report (2014a), the banking sector has been evolutionary and changing slowly in the past while the change needs to be a mix of both revolution and evolution. Banks fail to do so will be lagging behind. PwC report (2014a) identifies top six priorities for the banking sector to succeed and be revolutionary in 2020. These priorities are; developing customers-based business models, optimizing distribution, simplification of models, acquiring information advantage, fostering innovation and the required capabilities, managing risks and regulations and capital proactively. According to PwC report (2014a), banks acknowledge that they are constrained from handling such priorities due to many factors relating to competence, technology, financial and organizational obstacles. Therefore, banks need to be agile and undertake radical actions to address these constraints in order to foster innovation and transformation. A successful result of handling these priorities arise from balanced implementation. The key is to change in terms of organization and management, creating more agility in the processes, enablement of capabilities and talent and change the mindset of the banks executives towards innovation.

PwC report (2014a) also suggests that banks executives recognize these facts and acknowledge the need to enhance in order to foster innovation in their organizations. A new type of competence and talent need to be recruited, retained and enabled. Therefore PwC report (2014a) suggests that managing and organizing this type of talent needs to be handled differently with different performance metrics and reporting structure in order to avoid failure. Banks need also to have more agility in their technology, products and services in order act more quickly than they do, without the need to go through the old systems of testing, documentation and adoption. In addition, banks need to enable partnerships with innovative institutions and to create real sponsorship and buy in from top executives to foster innovation in the culture of the banks. Finally, PwC report (2014a) argues that Banks should not perform based on today's forces rather, banks should radically innovate and change to sustain the future; an endeavor that can be achieved through agility, openness and exploration of different alternatives.

In addition, the suggested framework in PWC report (2014b) offers several suggestions on how banks can become more innovative. The suggestions range from specific techniques to suggestions on management style, formulation of strategy and control tools. According to the framework, a strategy for innovation should not be developed in isolation. Instead, it should support the overall business strategy and objectives. Moreover, developing a formal innovation strategy where senior management decides what types of innovation that are required to meet strategic goals is of high importance. In addition, top leadership should be engaged and develop an entrepreneurial culture in which innovation is encouraged and rewarded at all levels. According to the report, banks typical business operations are geared to stable, predictable, repeatable situations. Breakthrough innovations deviates from the normal characteristics of banking business and are instead characterized by high ambiguity, rampant experimentation, and uncertainty. Therefore, building innovativen capabilities requires a different mentality and management approach than most other business processes in the banks. In addition, the report

suggests the formulation of the innovation groups that can be either centralized or decentralized. Such groups should be insulated from the rest of banking business and given the freedom to do rapid exploration and testing of ideas. The report stresses the importance of not confusing insulated with isolated as a link to the business is of great importance. The innovation groups should be able to freely collaborate with internal and external partners to explore innovation ideas.

Furthermore, the framework presented in PwC report (2014b) suggests other important aspects, the first aspect is related to incentive systems and compensation which should be constructed to encourage experimentation of new ideas and to reward employees for achieving innovation objectives, including objectives that go across organizational boundaries and functions. Another aspect is related to organization and management, where an organization design should be aligned with the type of innovation that is desired, and where different types of innovation must be managed differently. Another aspect is to incorporate partners from outside the organization to help accumulate new knowledge and innovation. Finally, the need to design, define and use clear metrics to measure the progress of achieving innovation goals. These metrics should provide incentives for behaviors that align with the innovation strategy.

4.2 Conditions for MCS and Innovation in the Swedish Banking Industry

The Banking Expert have been active in the banking sector for over 30 years, he headed key controlling departments and acted as a board member of many Swedish Banks and other organizations. He recalls the increased competitiveness due to deregulation in the 80's as a starting point for innovations in the banking sector. He states that the crisis in 2008 showed us that banks obviously did not have the needed controls themselves and are clearly in need of regulation. Further, he describes the issues of banking regulations to be divided in two different areas. Firstly, the regulators are not experienced in the business of banking and, as a result, the regulations are more bureaucratic than risk mitigating. The MCS that are implemented due to detailed regulation does not necessarily mitigate risk associated with innovations, but rather makes banking more complex and bureaucratic but not necessarily better managed or better controlled. Secondly, the ways banks approach the compliance process have an impact on the innovative environment of the banks. The Banking Expert has come across major differences in how banks implement compliance in the organization. He stresses the importance for the compliance staff of the bank to understand the business of banking. *“The important thing for a bank is that the compliance people that have to implement the compliance understand how regulations can run together alongside innovation and business”*. He continues:

“If these people understand the business and understand the innovations as such, they will be more efficient as compliance people as well as easier to deal with for the innovators themselves, if they really understand the environment that they are

implementing regulations, because then you can have an interactive discussion and they will probably end up with something that follows regulation and is as innovative as possible". Banking Expert.

The Banking Expert acknowledges the need for innovators to understand the regulations and how to communicate with compliance personnel. From his experience, the interaction between the different functions (innovation and compliance) has not always been optimal. He recognizes the issue of responsibility; (about the compliance units), he states, *"The only responsibility they have is to prevent things from happening, that might be wrong in some sense. They only have to cover their backs"*.

The Banking Expert describes compliance as a growing activity for banks and this is a management control issue in the sense that to what extent the management model tries to accommodate the conflict between regulations and innovation. He states:

"And they have lots of power now and they get more power as the regulations increase from Brussels, Frankfurt, Basel, and Stockholm. That's a problem and banks are dealing with these problems in different ways". Banking Expert.

The Banking Expert also criticizes the banks' claims that innovation activities are mainly derived to meet customer needs. He describes this strategy as reactive and acknowledges that this strategy might meet customers' needs in the short term, but it does not enable the banks to know what to expect in the future. He states that:

"One problem we had was that whatever innovation project we had in xx bank, it was necessary to ask the business organization: what do you think about in terms of prioritization, and they would from time to time have a completely wrong view or perspective, leading them to form the wrong view. And they would hamper real innovation in terms of what needs we really have in the short, medium, and long term". Banking Expert.

He also brings many examples of lack of communication between the different business units and top management which delayed the transformation of the banks to the digital era. He mentions the lack of competence of some key positions within the banks as a key reason of such delay. He states:

"This was in the beginning of the era of digitalization so it was important, we had different platforms for mobile banking and internet website, it was obvious we had to either merge them or at least make them more compatible. I think one drawback that IT Manager x had never been in business, he had always been in administration and then became an IT specialist and grew more and more into being a manager and he was always managing a combination of operation and IT and innovation or development of IT. He couldn't communicate with top management, if he had found the means to communicate with top management

and the CEO, then he would have been able to educate them a bit better and then they could have understood what the problem was and they could have been more clear in expressing their strategy". Banking Expert.

The Banking Expert strongly believes that the banks are lagging behind in terms of digital transformation, and he refers this as the main reason for the rise of the Fintech industry as there are many things that need to be improved and either the banks don't understand them or don't have the resources to do implement them or they are just too slow. He also claims that the reason behind this is due to the attitude of the bankers as they rely heavily on traditions and business relationships. He claims that even if the banks lose market share of around 2% they do not perceive it as a catastrophe, rather they continue working in the same way, but he warns that if they keep thinking in the same way, out of sudden banks will not only end up with one or two non-traditional competitors, rather there will be 10 or 15 of them and then banks will lose full segments to competition which is according to the Banking Expert happening right now.

He also believes that, the decentralized models adopted by some banks do not support innovation, although these models have advantages in many aspects, they do not provide optimal environment for innovation. The Banking Expert limits the banks' innovation strategies to digital transformation to either establishing innovation labs or acquisition of start-ups without focus on changing the business model. He makes an interesting statement about banks acquisitions of successful start-ups strategy:

"The typical way for champions to cope with that program of course is to pick them up from the market and then you pay a billion for something you might have been able to do for 300 million but that's a price you have to pay because you couldn't really see, maybe that not a bad strategy anyway". Banking Expert

The Banking Expert acknowledges the fact that there is a set of complex regulations in the Banking sector, and therefore it is difficult to be radical in terms of changes and states that the Fintech companies will always have an advantage. However, he believes that Banks should undertake radical changes and adopt radical innovations in a manner that may redefine banks' business model in order to cope with innovative competitors and to regain their market share on the lost segments, he states:

"They have to be less bureaucratic, if you have to move from bureaucratic mechanistic not so lean but process oriented organization over to more customer oriented and leaner way of working, you have to be radical you can't do that incremental. Trying to move completely from one management model to something is the opposite or close to the opposite, they cannot do it incrementally because it will stop in the way and fall back. The thing is, if the Board and CEO will say we shall be lean in 5 years, the first year we will change this, the next year we will change that, it is like saying in England let us move over to right hand traffic, let us start with the buses! It is as stupid as that". Banking Expert.

The Banking Expert also believes that banks have troubles with being innovative because they have to be well controlled. It is deeply ingrained in most banks that whatever innovative activity they are going to have, it has to be well contained in terms of management control. He believes that is a very strong belief among all bankers that without management control innovation would be so much more dangerous than it ought to be.

4.3 Case Companies

4.3.1 Bank A

Bank A representative has similar views on the business models of the traditional banks and innovation. He believes that traditional banks are not organized toward innovation, rather they are organized toward risk avoidance, risk management and compliance:

“The focus is not to break the law or lose money, not around innovation or leveraging technology. This is in the DNA of the banks that is how the managers are”. Bank A representative.

Bank A has a separate digital development department. The manager of this department (Bank A representative) has seen changes in the banks' MCS and how they approach innovations. He gives examples of establishing innovation hubs and acquisition of start-ups. He describes the innovation process as difficult due to the high failure rate of start-up (90%) and the high risk of innovation activities as they are in the unknown area. Bank A representative also brings up the issue of return on investment of innovation projects and activities. He states that many innovations are taking place in the user experience area such as fingerprint technology, customer flow and better apps etc... However, these innovations are not bringing in new revenue or improving profitability for banks. These innovations are of course increasing customer satisfaction and preventing banks from lagging behind in the market but they are not resulting in customers spending more money, and that is a concern according to Bank A representative. In other words, innovative activities have not improved profitability of the banks, according to Bank A representative, the reason behind this could be due to the fact all banks are improving the same areas at the same time. He is with the opinion that innovation units in the banks, if any, can hardly be managed and organized in a different way from the rest of the organization:

“It is difficult to have an organization that does things in one way and half of it does it in a different way. Because somewhere the interfaces are not going to work, and at some point you have to report to a manager, so they will either give you some sort of freedom or they will steer you, when the financial situation is good then there is support for innovation activities while when the financial situation is tight then the first place to look at is the innovation centers”. Bank A representative.

This is, according to him, due to the bureaucracy, required approvals, and the organizational structure of the bank. He also adds that the bank uses the same MCS' on the innovational activities as they do for the rest of the activities in the bank. He continues by describing the difficulties of behaving like a "start-up" within an established company and the conflicts between the nature of innovational activities and the standard required return on capital that is established in the bank. He expresses the need for autonomy to be able to behave like venture capitalists but he believes this can be problematic in the politics of the banking environment.

Bank A representative believes that banks in general are working under the illusion of control, as there are always plans and lists of requirements and this gives less room for innovation. Banks operate with a mentality of risk avoidance, compliance with rules and regulations and the fear of losing customers. He believes that this prevents agility and the ability to be innovative. He also believes that there is a pressure to meet financial targets and when there is a need for cost reduction to meet these targets, the cost cutting starts with the innovation centers or projects. Budgets as an example of MCS are used in a monitoring fashion with the emphasis on financial performance and the digital initiatives are treated as projects. The reason they are treated as projects because in that way, they are easier to monitor and assign budgets to. It also allows them to organize allocation of resources and allows the CFO to gain an understanding of how much they are investing and in what activities. Bank A representative is critical to how the projects are managed and budgeted for. He describes the method as quite rigid, slow moving and not very adaptable. Bank A representative believes that the activities are geared towards the convenience of the controllers and accountants rather than to deliver the best value or products:

"Digital developments are value adding activities and we are organizing these value adding activities for the convenience of budgeting and financial control not for the optimization of how we deliver value". Bank A representative.

Bank A representative *believes that* the main purpose for the use of the budget as a management control tool is to monitor the deviations from the budgeted figures, he states:

"The way we do projects and budgets is about counting beans, counting dollars rather than about delivering value to the market". Bank A representative.

4.3.2 Bank B

The view of the Banking Expert, on the growth of compliance is shared by bank B representative, when asked about the development of MCS in regards to innovation, he states that since the 2008 crisis, the largest part of their resources for development have been assigned to compliance with new regulations.

Bank B representative is not experiencing the same problem with return on investment or profitability as explained by Bank A representative, instead, he lifts up the benefits of cost

reduction that the bank has experienced due to rationalizations and enhanced productivity due to innovations. He also gives examples on innovations that can increase revenues such as interest caps on mortgages.

According to Bank B representative, their viewpoint is that it is important to properly understand the product and the business area where the innovation is to be implemented. This bank is divided by geographical areas and by products and process areas. They have product/process owners that negotiate with branch managers to decide product portfolio and prices. These negotiations facilitate the most structured form of communication between product owners and the local branches. Bank B representative describes their approach to innovation as pragmatic in the sense that they do not engage in an innovative activity only because it is “a hot subject”, they want to pick up on the right things that really can improve their business, increase customer satisfaction, or reduce costs. They do not necessarily make the innovations themselves but may pick them up from others. He provides us with an example of a successful acquisition of a company that provided an innovational investment product. Today, ten years after the acquisition, the bank still holds 90% of the market share in this product segment. Bank B representative regards their acquisition strategy as cost efficient:

“Sometimes you will miss these opportunities but it’s an interesting example, sometimes it works and sometimes maybe it doesn’t, at least we are not putting away a lot of money that we don’t get back”. Bank B representative.

Bank B representative continues on the subject of pragmatism and states that their organization believes that everything can be improved and that one should always look for improvements in smarter ways, and it is important to be open to opportunities of doing so. He states that this approach is difficult to formalize and describes their system as qualitative.

He states that they have various control systems in place; most of them are not necessarily supporting innovation because he believes it is difficult to find those systems. He sees culture and being focused on a more holistic approach on what is good for the business as more important because the control systems are more there for risk control, compliance or economic follow up on product profitability and recourse allocation, but none of the controls is directly targeting innovation because those controls are difficult to construct. On the other hand, he sees the importance of providing an infrastructure for picking up ideas in the organization.

In regards to the MCS to provide incentives for innovations and to evaluate them, Bank B representative responds:

“Typically in our organization, if someone has come up with things that are profitable and good ideas they may get more resources and more tasks etc. and if they are not, we will quit doing it, so it is kind of constant and you don’t need any complicated management control system to do that, their bosses will know. Bank B representative.

Bank B representative continues on the subject by describing a strong corporate culture in which the members' goals are well aligned with the organizations'. They do not provide any specific short-term rewards such as bonuses or other incentives but rather long-term rewards such as pension plans etc. This has created an atmosphere where members strive for organizational success and what is good for the organization is regarded as good for the members.

Bank B representative believes that the biggest digital revolution this far happened already in the late 90s when Banks started to use internet banking, he refers to the fact that the Bank has managed to have 98% of its transactions on the internet. He describes what is happening now as shifting from internet banking on the computer to cell phone instead, and he believes that both have the the same functionality so he does not regard this as remarkable digital transformation. He acknowledges that there has been some developments in the payments area but he does not regard them as real active changes when it comes to digitalization. He continues by exemplifying on Apple Pay, he believes that Apple has just added another layer on the credit card while they are still using the banking infrastructure, therefore he believes that they are not truly innovative in this regard. He gave an example of Bitcoin as a real innovator as they are not using the banking infrastructure and they have a completely new infrastructure, however, Bank B representative believes that Bitcoin now has many problems when it comes to anti money laundry and terrorist financing which makes it very difficult for Bitcoin to become competitive for security issues, regardless of this trouble, he thinks that it is much more true innovation. Overall, he believes that these competitors are not really threatening the banking sector as of yet. As they this far, are only shaving small parts of the income opportunities from banks.

He continues to speak about the new non-traditional competitors for the banks and states that Banks are observing the niche players in various segments or technology areas. According to Bank B representative, there is a banking infrastructure that everybody uses and it is difficult to change it rapidly through innovation, accordingly, the banking sector is not similar to technology industries where one technology company can replace another in a very short period time. Therefore he believes that the banking sector and in particular Bank B is not lagging behind in terms of digital transformation. He states that:

"I don't think we necessarily have to be there, the creators of the innovation, but we need to be good at choosing and picking up the right stuff as a lot of the ideas comes from outside the banking sector". Bank B representative.

Bank B representative provides other examples on why it is difficult to digitize the middle and back office activities at the bank. He believes that qualitative assessment of credit granting and management is much more valuable than the use of scoring systems or the reliance on the digital tools to handle the process. According to him, reliance only on the digital channels in such a process may lead to losing many other important aspects such as personal relationships, human expertise and competency. He also questions the ability to meet the regulation requirements also if such a process is digitized. He also with the opinion that digital channels can not replace the

need for personal contact as the Bank considers this aspect as a brand for its success. He supports his argument in referring to the Bank culture:

"We are a very culturally driven organization, we have had the same business model for 40 years, we are gradually changing the operations from a practical perspective, bit by bit, when customer needs and the environment is changing but the basics of the business model remains the same". Bank B representative.

5. Analysis and Discussion

This chapter presents our analysis and discussion of the the collected empirical data. Section 5.1 provides the analysis on the roles of MCS in the banking sector. Section 5.2 provides the analysis of the exploration and exploitation activities. Section 5.3 presents the analysis of the case companies' innovation strategies. Section 5.4 presents the analysis on structural and contextual ambidexterity in the banking sector and the case companies. Section 5.5 presents a discussion on the thesis findings and limitations. Section 5.6 presents the thesis contributions and our suggestions for further research.

5.1 Roles of the MCS

The importance of adjusting banks MCS to foster radical innovations, has been repeatedly suggested in the empirical data. As they argue that radical innovations require a different mentality and managerial approach than other banking processes. Particularly, adjustments need to be made in the organization structure, managerial styles, performance measurement systems, incentives, compensation systems and culture. Several of the changes that the banks are suggested to accommodate bear a resemblance to the roles of the MCS for radical innovations in Davila's (2005) typology. The suggestions are identified as a mix between the roles of the two components of strategy; autonomous strategic actions and strategic innovations (Davila, 2005).

The empirical data emphasizes the importance of top managers setting the right "tone" and embracing an entrepreneurial culture and creating an environment where innovative initiatives are rewarded and can occur at all levels of the organization. This resembles autonomous strategic actions where radical innovations can take place at all levels at any time in a less structured process. However, the suggested solutions in the PwC report (2014b) also suggests that top managers should develop a formal innovation strategy where they decide what type of innovations that is required to meet the strategic goals. These suggestions resemble the component of building strategic actions where top managers recognize the demand for radical change and formulate a responding strategy (Davila, 2005). When the MCS move to the role of supporting radical innovations, the levers of interactive controls and belief systems by Simons (1995) become more important (Davila, 2005). This is also recognized in the empirical data presented by IBM report (2010), PwC report (2014a), PwC report (2014b) and Olanrewaju (2013) as they highlight the importance of both culture and incentive systems that encourage experimentation and seeking new opportunities.

As described by Simons (1995), the belief systems point out key messages for employees on what is considered important for value creation. The empirical data suggests that innovations should be incorporated in the belief systems of the banks. Even though belief systems are important in this role, they do not serve the purpose of performance measurement (Simons,

1995). Therefore, other levers must take part such as diagnostic systems. The empirical data presented in PwC report (2014b) and Olanrewaju (2013) suggests the design of clear metrics to measure progress and achievement of goals; however, they do not offer any detailed metrics. When adopting Davila's (2005) approach to metrics for radical innovations, these metrics would consist to a higher extent of subjective or "soft" metrics.

The gathered data presented in PwC report (2014b) and Olanrewaju (2013) also suggests the formation of innovation groups which also is a suggestion in the role of the MCS for radical innovations (Davila, 2005) and (Forés & Camisón, 2016). According to PwC report (2014b), the innovation groups should be insulated but not isolated. The concept of insulation is interpreted as freeing the innovation group from the constraints of the control tools of the rest of banking business which would enable them to explore new ideas. However, while insulating the innovation group is important according to the PwC report (2014b), they also see the importance of not being isolated from the business. They suggest that the group should have the freedom to coordinate their own appropriate activities but at the same time have sufficient access to other internal and external units. This is important to assure the innovations relevance to the business.

5.2 Exploration vs. Exploitation:

The empirical data suggests that banks undertake different forms of exploration and exploitation in their digital transformation initiatives. Exploration is pursued through acquiring new external and tacit knowledge as suggested by Chebbi et al. (2015) or search and risk taking as suggested by March (1991). In line with theory, the empirical data described by Capgemini and Efma report (2015) and the Banking Expert suggests that banks undertake the exploration approach through their acquisition strategies of successful start-ups and the establishment of the innovation labs and incubation programs for new digital innovative companies. The exploitation approach is pursued through the utilization of their existing knowledge as suggested by Chebbi et al. (2015) or enhancing the efficiency and refinement of the existing competencies as suggested by March (1991). In line with theory, the empirical data found in Olanrewaju (2013), banks undertake this approach through establishing digital development units or centers of excellence that refine, enhance existing systems, apps and digital processes and products. Although both approaches can be claimed to be undertaken by banks, it could be argued that the uncertainty nature and the long time horizon of the exploration as suggested by March (1991) lead the banks to favor the exploitation approach. This can be supported by the risk avoidance nature of the banks as argued in the empirical data by Olanrewaju (2013), the Banking Expert and Bank A representative. This also supports March (1991) view that there is a tension between exploration and exploitation especially when the both approaches compete for the scarce resources. A view that can be supported further by the empirical data found in IBM report (2010) where the banking sector has strived for creating a balance between a stable innovation and traditional practices while the result was compromising innovation in the process.

To continue on the subject of the tensions between the exploration and exploitation activities, Banks make explicit and implicit choices between the two activities as suggested by March (1991). For instance, to facilitate the explicit choices (calculated investment decisions) banks are in need of financial information. The empirical data suggests that banks extensively use ROI to evaluate different alternatives and budgets to follow up on investments. As described by Bank A representative, the budgets are used for the convenience of the accountants and controllers which would facilitate explicit calculated choices. However, they may not serve the purpose of innovation in an optimal way as radical innovations seldom have a clear ROI due to the high uncertainty and time horizon (Davila, 2005). This can be a contributing factor to why digital initiatives are lagging behind as bankers expressed that the unclear ROI is one of the challenges to the digital transformation of their front, middle and back offices as found in Capgemini and Efma report (2015).

The majority of the gathered empirical secondary data from both surveys and studies conducted and published by international consulting firms and interviewed people in this thesis agree that the banking sector is lagging behind of in terms of digital transformation and innovation. Although, this view is not shared by Bank "B" representative, there is a consensus that innovation initiatives do exist in the banking sector but these initiatives are categorized under the incremental innovation category. This categorization can be supported by many views. Firstly, the reliance on the internal influences as the main trigger for innovation with the focus on enhancing efficiency of the processes. This reliance is considered the main driver for incremental innovation as described by IBM report (2010). Secondly, the view of banks as non innovative and the fact they are not the preferred workplace for innovators in addition to their evolutionary and slow changing nature as stated in PwC report (2014a). Thirdly, the reactive nature of the banks in addressing digital transformation based on the customers' needs as stated by Banks' A and B representatives, the Banking Expert and IBM report (2010) is also another argument to support the incremental innovative nature of the digital transformation initiatives in the banking sector.

The incremental innovation in the banking sector can be related to Davila's (2005) suggestion that incremental innovations derives from competencies already exist or easy to acquire. This enables organizations to move within the current business model, has low demands on organizational change and involves low risks. The empirical data presented by Olanrewaju (2013), PwC report (2014a), Banks' A and B representatives and the Banking Expert suggests that banks culture is built around risk avoidance, pride of the existing business models and reluctance to organizational change due to the bureaucracy and existing legacy systems.

Such characteristics do not enable the banks to radically innovate, as radical innovations, as suggested by Davila (2005) to radically redefine the organizations future strategy, are associated with high risks and require changes in the organizational structures, core competencies and competitive strategy. Such changes are against the prevailing nature of the banking sector at least as perceived in the current state. However, the majority of the studies and reports in addition

to the interviewees except for Bank B representative believe that banks should undertake radical changes in a manner that may redefine banks' business model in order to cope with innovative competitors and to regain their market share on the lost segments. This view is supported by the fact that banks' incremental innovations that were sufficient in the past are not considered sufficient in the current dynamic market as described by Olanrewaju (2013). This is also supported by the view that banks need to change and the change need to be a mix of evolution and revolution not only evolution as is the case of the banking sector as stated by PwC report (2014a).

5.3 Innovation Strategies of the Case Companies: Incremental vs. Radical Innovations

The empirical data suggests that the two banks have different strategic approaches to innovations and therefore, also different issues. Bank A is recognizing the need for radical innovations and has a structurally ambidextrous approach in the sense that they have separated functions for innovations as described by Agostini et al. (2016). However, although the different activities are separated at the operational level, there have been little adjustments to the control package of the bank, which has an emphasis on diagnostic controls. One reason for the use of the diagnostic controls, according to Simons (1995), is to ease the burden of managers. This is also the experience of Bank A representative as he views the diagnostic controls (e.g. the use of budgets) as a tool of convenience for the finance department rather than a tool that brings value and learning to the innovation project.

Bank A representative also expresses tensions between traditional diagnostic tools when he describes the struggle for innovation projects to meet the required rates of return etc. Another identified issue with the diagnostic controls is that the financial criteria in Bank A are not adjusted to the different characteristics of radical innovations. According to Davila (2005), radical innovations require adjustments to the process of financial evaluation and he compares the process to venture capital initiatives. That can possibly be an explanation to why the funds for innovative initiatives are decreased in times of cutbacks. Because, as we have learned from the interview with Bank A representative; the innovative activities are being evaluated with the same methods as the other activities in the banks and will therefore appear as the rational alternative to select when reducing recourses. This choice is rational because radical innovations will appear less attractive when applying traditional financial criteria (Davila, 2005). Radical innovations have a longer time horizon and higher risks and uncertainties (Chebbi et al. 2015), and as Davila (2005) describes, radical innovations require a funding and evaluation process with higher level of qualitative measures that are reliant on experts subjective judgments and evaluations.

Bank B on the other hand is not experiencing the same organizational issues; this can possibly be explained by their different approach to innovations. As they are not strategically aiming at fostering internal radical innovations, one would assume to find less tension between

innovations and the MCS of the bank as the incremental innovations are closer to the core business of the bank. Bank B is aiming at evolving incremental innovations closely related to current products, which resembles the approach of induced strategic actions (Davila, 2005). Here the MCS takes a different role than it would for radical innovations. Here the role of the MCS is to facilitate a framework for incremental innovations. The MCS focus is to transfer information and knowledge throughout the organization to enhance learning and improve current processes and products (Davila, 2005). This is also the described intentions of Bank B representative and their current MCS seems to facilitate this. Bank B is decentralized with a strong emphasis on customer relations, with negotiations between branch managers and central product owners, used as a mean to transfer knowledge on customer demands throughout the organization. The result is an internal market mechanism that transfers information on markets conditions and customer demands throughout the organization, thus enabling incremental improvements to products and services derived mainly from customer demands. This market mechanism fulfills the role of the MCS to facilitate interaction between day-to-day actions and strategy as described by Davila (2005).

As for radical innovations, Bank B deems them as too far off from the banking business and too risky to engage in. They are satisfied with monitoring the market and to acquire radical innovations that have been proved to be successful on the market. The Banking Expert recognizes this strategic approach as common within the banking sector and comments that it can be a costly approach due to missed opportunities but maybe not a bad one.

5.4 Structural vs. Contextual Ambidexterity

5.4.1 Structural vs. Contextual Ambidexterity in the Banking Sector

The empirical data suggests that banks have addressed the new challenges arising from the new competitors along with their tendency to meet customers' demands and desires through various techniques. As stated by Capgemini and Efma report (2015) and the Banking Expert, certain banks establish innovation hubs or incubation programs for new digital innovative companies or implement an acquisition strategy for the successful start-ups. While other banks, as stated by Olanrewaju (2013) establish a digital innovation departments or a centers of excellence to design or enhance services and products to be used by other business units. In line with theory, the pursuit of such techniques implies that the tension between exploration and exploitation are attempted to be solved by the banks through structural ambidextrous approach. This is achieved by dividing the different activities in separate organizational units as described by Agostini et al. (2016). This also enables the banks to have business units that are responsible for exploration activities while other departments and business units engage in exploitation as described by Chebbi et al. (2015).

The empirical data also suggests that banks acknowledge that customers' desires and expectations are met by the new competitors more than the banks themselves and realize the reasons behind this issue such as costs, prioritization and regulations as described by Capgemini

and Efma report (2015). They also recognize that they need to, change in terms of organization and management, have more agility in their processes, enable capabilities and talent and change the mindset of the executives towards innovation. On the one hand, these facts are acknowledged by the banks in order to foster innovation in their organizations. On the other hand, they acknowledge that there are constraints in terms of competence, technology, financial and organizational obstacles as described in PwC report (2014a). However, the empirical data indicates that ambidexterity is not implemented at the contextual level of the banks. One indicator is the narrow scope of the bankers in managing the digital transformation activities as standalone initiatives and the focus on shallow digital initiatives that target basic customer transactions as described by Olanrewaju (2013). Another indicator is the bureaucracy and attitude of the bankers and the pride of traditions, business relationships and legacy systems as stated by the Banking Expert. This implies that, although banks understand the challenges and the key forces for the need to change in order to remain competitive and although they are undertaking innovation initiatives in different forms, sufficient contextual support for innovation does not seem to be offered by banks. The presence of these indicators suggest that banks are not striving for shaping their organizational context with support of innovation as suggested by Agostini et al., (2016).

Moreover, tensions are not being solved by banks as the culture of innovation is not rooted in the banking sector and is not linked to the banking structure and context as suggested by Agostini et al. (2016). This can be supported by the views of the studies of consulting firms and the interviewees on the culture, attitude and mindset of the banks' executives. Particularly, the argument that innovation is not a function and should be rooted in all aspects of the banks and their culture and attitude as described by IBM report (2010). In addition to the need to change the mindset of the banks' managers towards innovation as stated in PwC report (2014a) and the fact that bankers' attitude does not change if small market shares are lost for non-banks competitors as stated by the Banking Expert. This suggests that the contextual issues are overlooked by the banks even if they aim to solve the tensions at the structural level. This does not imply that banks offer the organizational support for both activities (exploitation and exploration) as suggested by Chebbi et al. (2015).

5.4.2 Structural vs. Contextual Ambidexterity in the Case Companies

Bank A has a structural ambidextrous approach to innovations by setting up a unit devoted to innovations in areas that are previously unknown to the bank (radical). Nevertheless, they seem to be more conservative on the contextual/management level. The bank is struggling to make the right adjustment to the MCS on the strategic level to achieve supporting MCS which would be needed to achieve contextual ambidexterity as described by Chebbi et al. (2015) and Agostini et al. (2016). This can result in a role conflict of the MCS; the digital development department of Bank A is conducting explorative and innovative activities previously unknown to the bank, which requires the MCS to take a different role than it would in the departments devoted to exploitation. As Davila (2005) describes, the role of MCS regarding radical

innovations becomes almost the opposite to the role of traditional MSC, and a role conflict seems unavoidable if the right adjustments are not made to the MCS.

Bank A representative states that the banks are not geared towards innovations as he believes it is in their culture to be risk avoidant with a focus on compliance. He is experiencing these negative features of the bank's MCS even though he is working in a department devoted to innovative activities. It is possible that the digital development department of Bank A is experiencing obstacles because they are not offered the contextual support required to be a well-integrated unit of the organization. This can further be supported by his statement that expresses the difficulties of engaging in activities with characteristics that departs from the rest of the banks' operations. The findings from Bank A indicate that; even though the innovative activities are structurally separated to create an innovative internal environment of a unit, they are still negatively affected by the MCS of the bank as the designers of the MCS do not share the innovative culture and fail to adjust the parts of the control package that affects the innovative business unit. In this way, the structural ambidexterity is not sufficient as the restricting culture of the bank, (described by Bank A representative as risk avoidant and bureaucratic) is imposed on the innovational business unit through the MCS. This is in line with Chebbi et al. (2015) who stresses the importance of not overlooking contextual ambidexterity, as there is a need for the right organizational support of innovative functions to be integrated in the organization.

As described by Agostini et al. (2016), to really solve the tensions; an organization should be integrated around a culture molded by top management and linked to an all-encompassing structure and complementary context. As Bank A representative describes; the different units are going to intervene at some point and share some common organizational infrastructure, in this case referring to an extensive bureaucracy and required vertical approvals, which is not perceived as accommodating for innovative activities (Davila, 2005) and further supports the claims that structural and contextual ambidexterity should be used as complements to each other (Agostini, et al. 2016). A part of the contextual support can therefore be the design of the MCS to adopt the roles suitable for radical innovations as suggested by (Davila, 2005) and thereby assist in solving the tensions between exploration and exploitation.

Bank B does not have a separate unit for innovative activities; they describe their innovations to take place close to daily operations which is of course affected by their incremental approach to innovations. The representative from Bank B recognizes the difficulties in designing MCS to facilitate innovation. He states that their MCS are not specifically aimed for this but rather for risk control and compliance etc., however, one aspect that he emphasized as important for innovations is the ability to provide an infrastructure for picking up ideas in the organization (both internal and external information). This can be related to Forés & Camisón (2016) where a firm's absorptive abilities to foster innovations are emphasized. The internal market function of Bank B enables the transfer of knowledge which is considered as an important factor for successful innovations (Forés & Camisón, 2016). To minimize misunderstandings

between units and to create a common language, organizations should construct teams with members from different functions (Forés & Camisón, 2016) and (Davila, 2005). The negotiation between local branches and central product owners that takes place in Bank B can be interpreted as temporary teams with members from different functions. Indeed, the division into profit centers that negotiate with central functions can also be seen as creating strong internal divisions with opportunism between departments but Bank B representative describes a strong corporate culture as a mean to align goals with no short-term incentives. Rather they have a holistic approach where individuals identify strongly with the organization and finds satisfaction in organizational success rather than in unit success.

5.5 Discussion of Findings and Limitations

The aim of this thesis was to investigate the possible tensions in the banks between innovative and core activities, with the focus on the role of MCS in balancing and solving these tensions. The banking industry is of special interest as technology is affecting banks' historical strong competitive position and enabling new competitors to threaten banks in business areas in which banks were previously unthreatened by non-bankers. This change in competition along with the changes in the desires and demands of the customers is forcing banks to become more innovative. The pursuit of change to be innovative is a challenging task indeed, especially in the regards to the banks' current adopted business models, attitude, regulations and legacy systems among other factors and obstacles.

Banks' incremental approach to innovations does not seem to meet the desires and expectations of both the banks themselves and their customers. This has allowed new competitors to rise and capture market shares from banks. Moreover, banks' attempts to adopt radical innovation vary and are pursued in different forms. Several banks have started innovative initiatives such as innovation hubs/centers/departments, however; radical innovative activities seem to be problematic to integrate in the banking business and culture. One explanation to this issue, offered in the empirical data, is banks' focus on the size of the IT along with the view of digital transformation initiatives as separate function with no account of other important factors that should accompany innovation activities in terms of management and organization of such activities. Nevertheless, the banks' solution to the tensions between exploration and exploitation is by structural ambidexterity while the contextual issues are overlooked even if they aim to solve the tensions at the structural level. This indicates that banks are not truly ambidextrous as structural and contextual aspects are not combined. Moreover, the role of the MCS in the banks has not been amended to accommodate the changes in the banks' strategies toward innovation.

The results of this thesis indicate and highlight several issues in integrating radical innovations into organizations where innovations historically has not been considered a significant factor to obtain competitive advantage and secure stability at the short and long terms.

However, during our collection of empirical data, we have encountered some obstacles which will limit the significance of our findings. The limitations of our findings are described as follow:

The first limitation of this thesis is the limited number of participants and interviews. During our research, we have struggled to find participants, despite our repetitive attempts to contact the banks in Sweden. We could only acquire one interview from each of the two case companies. The aim was to complement the interviews further with the help of questionnaire. However, only one of the two case companies' representatives replied to the request. Therefore, the lack of data, collected from the case companies, surely affects the significance of our findings. Had we gained more access to personnel in different functions within the case companies, there is a possibility that our results may have been different.

A second limitation of this thesis is the concerns of anonymity, expressed by the interviewed participants representing the case companies. Anonymity was requested from the case companies representatives in a manner that does not enable us to disclose their positions and functions. Moreover, some of the information relating to the case companies' management control systems and innovation activities is regarded highly sensitive by the case company representatives. We have therefore been restricted to disclose certain information about their MCS and innovation activities that, if published, could have broadened our empirical data and added to the significance of our findings. Further, another limitation is related to the industry used in this thesis, our empirical research is confined to the banking industry. An industry that holds certain characteristics that are rather unique. Therefore, our results may not be applicable to organizations in other sectors.

5.6 Contributions & Suggestions for Further Research

This thesis contributes to ambidexterity, innovation and management control literature through developing an integrated theoretical framework that clarifies the extent of interplay between ambidextrous organizations, their innovation strategies and MCS. The thesis also contributes to the knowledge of the aforementioned aspects through analyzing the empirics using the developed integrated theoretical framework in an important business sector, in this case the banking industry. An industry regarded of high interest among academics, regulators, customers and business owners along with broad set of stakeholders. The thesis further contributes through providing practical examples of the MCS roles in different innovation strategies adopted by banks, particularly in their digital transformation initiatives. Although our empirical evidence is too limited for us to generalize or draw firm conclusions, the empirical findings of this thesis can possibly serve as an indicator and roadmap for future research on the role of MCS in ambidextrous organizations. Finally, this thesis contributes to the limited number of research on how organizations work to solve the tensions between the opposing forces as pointed out by Agostini et al. (2016) and O'Reilly & Tushman (2013).

Given the importance of the subjects under study and the fact that innovation and control is regarded of high importance to the banking sector in nowadays business and for their future survival and prosperity. In addition, due to our significant limitation in access to empirical data, we argue for future research to be carried out covering larger samples of empirical data through targeting more participants and respondents to the areas under study. Moreover, we believe that the concept of ambidextrous management controls systems can be an area of interest for future research. In this regard, the developed integrated theoretical framework of this thesis can be used as a starting point and a suitable model to analyze the ambidexterity of MCS. Therefore, we call on future research on the extent of interplay and interaction among the three covered topics in our thesis, namely; ambidexterity, innovation and management control.

6. Conclusion

Our interviews along with the collected data suggest that radical innovations require changes in the core culture of banks and consequently, change need to be made to their MCS. The perceived incompatibility of radical innovations and banking culture, with the associated tensions, are mainly being solved by structural ambidexterity, i.e. dividing the different tasks. This have, in some cases, led to innovations losing touch with the business side of banking. In addition, the structural division has not truly solved the tensions between innovative activities and the banks' core business because of the failure to adapt the MCS to radical innovations. This implies that there is a need for contextual ambidexterity to support both exploration and exploitation activities and to integrate innovation as a part of banking culture with support from the top management. Only then, can the appropriate changes be made to the MCS which will allow both exploration and exploitation activities to thrive simultaneously. There will probably still be a need for structural ambidexterity in the banks, however, the key to solve the tensions lays in the ability to recognize the required differences when managing and controlling innovation activities. This will require changes in the MCS designed and implemented by banks in addition to changes in the roles of these MCS. Examples of changes to solve and balance the tensions include changes in the banks culture, internal environment, organizational structure, financial criteria used to evaluate innovative projects, reporting systems, incentives and compensation systems. A significant factor of being an ambidextrous organization seems to be the design of an ambidextrous MCS and our findings indicate that there is room for improvement in this area. We argue for an ambidextrous approach when designing MCS to enable it to accommodate different roles for different activities. If this approach is considered, the result will be an ambidextrous MCS that can help organizations in solving and balancing tensions between exploration and exploitation.

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Appendix 1: Interview Questions

- Are you experiencing any conflicts between innovations and the culture of your bank (in the context of management control)?
- Is there a balance issue between the need for innovation and the required internal controls in your bank?
- If yes, in what way? And what are the reasons?
- From your experience in the bank, have you seen any changes in the MCS/Structure with the purpose of enhancing innovation?
- There are different types of innovations: innovations that improve and evolve processes, products and services that are in the current portfolio of the organization, and innovations that are outside the organization portfolio that radically change the business model. Does your organization recognize these two different types and take them into consideration when designing MCS?
- Information and knowledge are important factors for successful innovation. Does the MCS in your organization facilitate the accumulation, exchange, and utilization of this information?
- Do you have a structured way to accumulate external information knowledge (e.g. changes in market conditions, regulations, technology, competitors)? If yes, how such information is made accessible for relevant employees?
- What do you believe to be the triggers for innovation in your organization?
- Do you believe that your organization as of today is lagging behind or on the right track in terms of innovation, and if so, why?
- To our understanding, there are processes that gain from innovation and there are some processes where innovation is an unwanted risk, how does your organization design their MCs and organizational structures to manage both types of processes?
- An example of MCS is the performance measurement systems at the employee and units levels. Can we gain an understanding of the purposes and intentions of the use of this MC in different units?