JYU DISSERTATIONS 382

Pasi Aaltola

The Financial Mindset in Managerial Work

Strategic Roles of Accounting

JYVÄSKYLÄ UNIVERSITY
SCHOOL OF BUSINESS
AND ECONOMICS

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ABSTRACT

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This doctoral dissertation examines the role of accounting in managerial work. The issue is examined from the perspective of individual managers, and it explores their understandings of the strategic role of accounting in managerial work. The research is based on multiple data sets (written material, interviews, visualizations) produced by 91 experienced managers from a variety of organizations. This interpretative qualitative research project was done in several phases utilizing various theoretical frameworks and innovative methodological approaches. The dissertation report consists of an introduction and four research articles, which are all based on empirical studies.

This study contributes to the methodological and theoretical development of accounting research. Besides responding to calls for accounting research on the managers' perspective, the results describe what the manifestation and use of accounting in managerial work actually is. The results outline four elements that constitute a manager's accounting worldview. From the perspective of an individual manager, the role of accounting is wide-ranging and it is intertwined with one's continuing sensemaking in managerial work.

In addition to the holistic view on accounting in managerial work, this research examined accounting's roles in the strategic thinking and strategic development work that managers do. A comprehensive description of the benefits and disadvantages of accounting in managers' strategic thinking and decision-making is theorized, illustrating accounting's paradoxical nature. In addition, the results identify key concepts of management control for ongoing development work on business model and managerial innovations.

Although sometimes unobtrusive, accounting was found to play an integral strategic role in managerial work. The results of this study suggest that a financial mindset in managerial work is characterized by a need to see one's managerial area of responsibility and its development through accounting logic. This study suggests that since managers' understanding of accounting in their work is strongly grounded in their experience and professional contexts, the advancement of such understanding should be based on that same experience. This research helps managers to view their professional setting from an accounting perspective and determine one's position as an actor in the accounting realm in their organization.

Keywords: management, accounting, strategic thinking, strategic development, innovation

TIIVISTELMÄ (ABSTRACT IN FINNISH)

Aaltola, Pasi
Taloudellinen ajattelutapa johtamistyössä: Laskentatoimen strategiset roolit
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Tämä väitöskirja syventyy talouden merkitykseen johtamisessa. Asiaa lähestytään tutkimalla johtajien ymmärrystä laskentatoimen strategisista rooleista heidän työssään. Tämä tulkitseva laadullinen tutkimushanke toteutettiin useassa vaiheessa hyödyntäen erilaisia teoreettisia näkökulmia ja empiirisiä tutkimusasetelmia. Tutkimus pohjautuu 91:n johtajan tuottamaan monipuoliseen aineistoon (kirjallista materiaalia, haastatteluja, visuaalista aineistoa). Väitöskirja koostuu johdanto-osuudesta, sekä neljästä julkaistusta tutkimusartikkelista.

Tutkimus tarjoaa metodologista ja teoreettista kontribuutiota laskentatoimen tutkimusalalle. Tulokset tuottavat ymmärrystä johtajien taloudellisesta ajattelutavasta ja kuvaavat neljä talousasioiden ulottuvuutta johtamistyössä. Johtajan näkökulmasta talouden rooli on laaja-alainen ja se kietoutuu johtajan jatkuvaan pyrkimykseen jäsentää ja ymmärtää omaa työtodellisuuttaan.

Talousasioiden johtamistyöhön liittyvän kokonaiskuvan lisäksi tutkimus syventyi talouden rooliin strategisessa ajattelussa ja strategisessa kehitystyössä. Tulokset kuvaavat talouden paradoksaalista luonnetta strategioinnin yhteydessä jäsentämällä laskentatoimen hyötyjä ja haittoja johtajan strategisessa ajattelussa. Lisäksi tutkimuksessa muodostetaan lähestymistapa strategisen liiketoiminta- ja johtamisinnovaatioiden kehitystyön ohjaukseen.

Vaikka laskentatoimen rooli johtamistyössä todettiin toisinaan huomaamattomaksi, taloudella havaittiin olevan olennaisia strategisia rooleja johtamistyössä. Johtajan omaan työhönsä kytkeytyvä taloudellinen ajattelutapa rakentuu merkittävästi hänen kokemuksiensa kautta. Tutkimuksen tulokset osoittavat, että johtajan pyrkimys hahmottaa oma työvastuualueensa taloudellisen logiikan kautta tulisi ottaa huomioon myös hänen taloudellisen ymmärryksensä kehittämisessä. Tämä tutkimus auttaa johtajia hahmottamaan omaa työtään monipuolisesti talouden näkökulmasta ja jäsentämään omaa toimijuuttaan organisaationsa strategisen taloudellisen menestyksen rakentamisessa.

Keywords: laskentatoimi, talous, johtaminen, strateginen ajattelu, strateginen kehittäminen

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FOREWORDS AND ACKNOWLEDGEMENTS

"If we knew what it was we were doing, it would not be called research."

The journey towards this doctoral dissertation was a long one with many moments of uncertainty. The research project started with a general idea, aiming to understand better the relationship of accounting issues and managerial work. In addition to the starting phase, during the project I encountered numerous situations where I was rather unaware of what I needed to do next. Often a couple of steps in the wrong direction were taken before finding the way forward. Nevertheless, with time and dedication these situations were eventually solved. Now in retrospect, I may say that this project, formed progressively in many stages, was indeed called *research*. I am also certain that the journey would have been impossible without support from a variety of people. I have deep appreciation for all who have contributed to this project in many ways.

First, I am privileged to express my appreciation to my co-authors and supervisors Professor Marko Järvenpää and Director of Executive Education Ari Manninen. It was your genuine professional interest in accounting and managerial work that inspired me to choose this topic for my research. Your continuous support and guidance throughout the years has been instrumental. Furthermore, I would like to thank Professor Jukka Pellinen for guidance and encouragement. In addition, the positive pressure via certain deadlines you have suggested for the project has been instrumental. I would also like to thank my closest colleagues at the University of Jyväskylä. I have had the privilege of working in a very supportive working environment. Thank you to all members of the Avance Executive Education unit— your support and flexibility has made this research journey possible.

This study is built on the active involvement of a large number of managers from a variety of organizations. Executive education at the University of Jyväskylä has been a crucial platform for the entire project. I would like to thank especially the 91 EMBA students and alumni members who participated in providing rich and unique qualitative data. The findings of this research are founded on your experience and insight. However, the network of management professionals contributing to this project is even larger. I am privileged to have had the opportunity to present my work, have discussions, and learn from several hundred executive students during this research journey. Furthermore, numerous experts working in executive education, coming from the academic world as well as from corporate circles, have influenced my thinking on the topic. I would like to thank all the people in my networks who have inspired me and moved me forward. You know who you are!

This project has been a valuable professional learning journey for me. It has provided an opportunity for me to develop in a specific field of expertise, that of academic research. I would like to express my appreciation to all the distinguished scholars who have been interested in discussing my work at numerous academic events throughout the years. I would like to thank researchers from the

JSBE Accounting Change research group for a supportive and welcoming environment and much good advice. I would also like to thank numerous anonymous reviewers in evaluating and commenting on my conference papers and journal publications. Thank you also to the reviewers as well as the opponent of this dissertation.

In addition to being an inspiring intellectual journey, this research project has also been an experience of ruthless effort. This work has been done at the University, at home, in hotels, airports, and trains, and even during long walks with the dog. I am grateful for those researchers in the field of technology who have made this project possible by developing remote working devices and software, music streaming services, noise-cancelling headphones etc. Claiming that doing academic research is always easy would be a lie. I carried out this research during years often regarded as the busiest of one's life, loaded with a professional and private life obligations and schedules. Therefore, maintaining at least some sort of a balance in life is essential. I'd like to thank my friends, including my fellow hapkido martial art practitioners, for keeping me energized and offering me something different to concentrate on after office hours. It seems that it does not matter whether you pursue a black belt or a black hat, since in both you have to tolerate a lot of beating from the community in order to learn and build perseverance. No pain, no gain, I guess. And speaking of unpleasant encouragement, I would also like to highlight the tremendous, yet painful motivational boost that has come from many friends and acquaintances, from the people continuously posing the haunting question: "When will your research project be ready?"

Finally, I want to express my deepest gratitude to the ones closest to me: my family. Your support and patience has been instrumental in this process. With you in my life, I have the energy and courage to engage in demanding activities where I do not always know what I'm doing, such as this research project. You keep me going.

Leppävesi, 30.6.2021
Pasi Aaltola

FIGURES

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ORIGINAL PUBLICATIONS

1. Aaltola, P., Järvenpää, M. 2017 Narratives on the accounting worldview of practising managers, Nordic Journal of Business, Vol. 66, issue 4

2. Aaltola, P. 2019. Strategic thinking and accounting: potentials and pitfalls from a managerial perspective, Journal of Management Control, Vol. 30, issue 3

3. Aaltola, P. 2018. Investing in strategic development: Management control of business model and managerial innovations, Qualitative Research in Accounting & Management, Vol. 15, issue 2

4. Aaltola, P., Manninen, A. 2021. Drawing the premises for personalized learning: Illustrations of management and accounting, Journal of Accounting Education, Vol. 54, issue 1

CONTENTS

1 INTRODUCTION

1.1 The topic under investigation

This research project began with genuine curiosity and reflection. What at first appeared to be a simple, unquestionable theme eventually became a fascinating research journey.

Accounting in managerial work. It seems like a straightforward, dispassionate set of words without any interesting elements. It is easy to assume that accounting is essential in managerial work. Striving to create financial success for an organization is one of the cornerstones of working in managerial positions, so it seems self-evident that managers use accounting in their work in multiple ways. The presence of accounting in today's world is pervasive. In addition to business contexts, financial vocabulary and concepts are everywhere in society. A variety of issues are analyzed from an economic perspective, estimating the costs and potential financial outcomes of different alternatives. It is almost inconceivable to think that any major decisions would be made without aiming to outline their financial implications. Hence, it seems reasonable that leaders of business and other organizations need to be equipped with sufficient accounting competencies in order to be qualified for their crucial managerial roles. In a similar vein, their organizations are expected to have appropriate accounting practices in place. Various stakeholders set expectations for organizations to operate in a financially viable way and want to monitor that progress.

These demands, which stem from the managers' operating environment, create a need for accounting research and education. And accounting indeed has developed a strong status among management sciences. It can be found as a core content area in practically all business and management programs, ranging from undergraduate to executive education. Accounting literature is abundant as well, with a plethora of educational content and frameworks aimed to be useful for managers in a variety of contexts. In addition to specific decision-making situations, managers use accounting information beyond that in developing holistic knowledge of their work environment (Hall 2010). Accounting is seen to play a strategic role in managerial work, both in formulating strategy as well as implementing it (Skærbæk & Tryggestad 2010). Overall, being knowledgeable in accounting concepts and methods can be considered a fundamental part in an adequate set of managerial competencies.

This research project started with sincere reflection on accounting and managerial work. Given the undeniable importance of accounting and the well-grounded rationale supporting its role in managerial work, the matter began to appear more complex. Using accounting in managerial work is not straightforward and unambiguous. Yet it is common to address management accounting practices without really challenging their aptitude in the practice of management. This has received considerable critical attention in the literature. Numerous prominent scholars (Jönsson 1998, Hall 2010, Scapens 2006, ter Bogt & van Helden 2012, Hopwood 2007, Burns, Hopper & Yazdifar 2004) have called for accounting research that promotes perspectives on actual managerial work. Moreover, the concern that the whole management research field should aim for more practical relevance (Pfeffer 2007, Will 2012) has led to a recent stream of research called the "practice turn" (Ahrens & Chapman 2007, Skærbæk & Tryggestad 2010, Whittington 2011), promoting a focus on the practice of managerial work.

An interest to explore this theme also emerged gradually from the issues managers were facing when studying accounting. The University of Jyväskylä's executive education operations provided a platform for these contemplations. Accounting modules in executive education were often found to be surprisingly demanding to design. One of the main challenges was to reach a sufficiently high level of managerial relevance in course content and student assignments. In addition, the often-perceived lack of accounting approaches in strategy-related applied assignments that students did led to further confusion of the issue. For example, many of the executive MBA final theses that the students made at the end of their studies were strategic plans and initiatives created for the participants' own organization. However, explicit use of accounting frameworks or calculative analytics did not appear to be common at all in those projects.

When the problematics and multidimensionality of accounting in managerial work began to emerge, many intriguing questions arose. Why is it often surprisingly disconcerting for experienced managers to study accounting? Why do managers often restrain themselves from using accounting in outlining their strategic initiatives? What is the role of accounting and management control in leading innovative organizations? How can accounting be used as a useful learning device to build a profitability-related strategic mindset in an organization? And furthermore, how is the financial mindset in managerial work constituted in the first place? As a manager, how do you actually know if you have done a good job?

Although some research has been carried out to shed light on these questions (Jordan & Messner 2012, Goretzki 2013, Mike, Pike Richard & Saudah 2007), managers' relationship with accounting has received scant attention in the existing literature. Since a body of research highlighting accounting professionals' views on accounting already exists, an interest emerged to explore instead managers' understanding of the role of accounting in their work. This research project was set to examine management accounting from the perspective of its most important user: practicing managers.

1.2 Aim of the study

This dissertation explores the ways in which managers construct their understanding of accounting and how their financial mindset, meaning here the manager's ways of thinking about accounting, is constituted. The main objective of this doctoral dissertation is to *explore managers' understandings of the strategic role of accounting in managerial work.*

This objective should be considered in light of the following clarifications. First, this dissertation takes individual managers, instead of organizations, as the primary unit of analysis in an attempt to understand accounting in the context of managerial work. Furthermore, the aim is to study accounting as part of managerial work not from the perspective of accounting professionals, but from that of personal standpoints of individual practicing managers. Another emphasis of the main objective of the dissertation is the chosen strategic perspective. Instead of concentrating on, for example, financial reporting and specific ex-post analyses, this study addresses accounting mainly from the forward-looking perspective of managerial work. Managers' understandings of accounting are addressed primarily in the context of strategic thinking and development, when managers are striving to build a successful future for their organizations.

The main objective of this dissertation was addressed in several phases utilizing various theoretical frameworks and innovative methodological approaches. The dissertation consists of four articles. Each one approaches the general aim of this study from a specific perspective, but as a whole, these perspectives parallel each other. The following describes each of the sub-studies' objectives.

The first article ("Narratives on the accounting worldview of practising managers") approaches the subject of the study – managers and accounting – from a broad perspective. Its aim is to explore how managers view accounting in their work in order to frame the big picture of the dissertation topic. The second article ("Strategic thinking and accounting: potentials and pitfalls from a managerial perspective) takes a more refined perspective on accounting, addressing it in a strategic context. The research question of the second article is to investigate the ways in which experienced managers find accounting useful in strategic thinking and what are the disadvantages they have experienced? The third article ("Investing in strategic development: Management control of business model and managerial innovations") concentrates on conceptualizing management control in iterative and learning-intensive developmental activities. The research question of the third article is as follows: What do experienced managers consider essential elements of management control in the strategic development of non-technological innovations? The fourth article ("Drawing the premises for personalized learning: Illustrations of management and accounting") reports on a teaching innovation using participant-generated drawings in educating managers.

The aim is to experiment on the potential of drawing as a novel pedagogical approach in learning and understanding accounting from the perspective of managerial work. In all, each the four sub-studies contribute to the main objective of this study by shedding some light, each from their chosen perspective, on managers' understandings of the strategic role of accounting in managerial work. The next chapter describes the phases of this investigation in more detail.

1.3 Overall description of the research process

The research process of this dissertation can be described as both carefully planned and as flexible and emergent. The whole research journey took years and proceeded in several stages. An article-based approach was chosen to support the sequential and modular progression of the project. This way the doctoral research could be divided into several subprojects and done flexibly alongside the researcher's main job. An article-based approach enabled the findings to be published in journals already along the way, while also making it possible to take pauses every now and then when certain milestones were achieved.

Despite the careful planning of the research process, it would be false to claim that the focus of all four articles was pre-designed in the beginning. On the contrary, it was only after the first sub-study when the direction of the project started to unfold. The following describes the essential steps of the research journey and summarizes the outcomes of each of the four articles.

The first study ("Narratives on the accounting worldview of practising managers") was instrumental in starting the whole research process. It was designed in order to help establish the big picture of the topic of managers and accounting. The aim was to approach the issue with a carefully planned empirical approach, but deliberately with an open mind. An inductive research approach was adopted to further the understanding of the relationship between managerial work and accounting. The research problem of the first study was general by nature, broadly defined as to investigate how managers view accounting in their work. The what and the why of the research purpose were initially outlined, after which the data were allowed to speak for themselves. This interpretative and qualitative study took a unique approach by using narrative texts for building an understanding of how managers view accounting in their work. The first study brought forward the multidimensional nature of accounting in managerial work, outlining the results in a four-dimensional framework presenting the practicing managers' worldview of accounting. One of the most intriguing outcomes was that managers described the role of accounting in their work not only emphasizing retrospective control, but also the future-oriented building of successful organizations. Accounting is often used to produce reports representing the past and the current situation, but what about the strategic foresight and visioning aspect of managerial work? This need for managers to strategically understand their managerial area of responsibility and its development in financial terms led to collecting the second data set with a more specific focus. The second phase of the research journey approached accounting from a strategic perspective through two data sets, leading to two published articles ("Strategic thinking and accounting: potentials and pitfalls from a managerial perspective" and "Investing in strategic development: Management control of business model and managerial innovations").

The second study that was initiated ("Strategic thinking and accounting: potentials and pitfalls from a managerial perspective") explored the strategic thinking of managers from an accounting perspective. Based mainly on interview data from managers working with strategic roles in various organizations, an understanding was built on the experienced potentials and pitfalls of accounting in strategic thinking. The results were elaborated into a framework presenting the dual nature of accounting in strategic contexts. This study suggested that the benefits and pitfalls of accounting for strategic thinking constitute a paradoxical duality that cannot be fully solved but must be addressed by managers. The observed role of accounting in managers' strategic thinking also offered implications for management control in organizations. By making the latent opposing forces of accounting and control more explicit, a manager can create a more powerful context for creative strategic thinking.

The third study ("Investing in strategic development: Management control of business model and managerial innovations") was built on the same data sets as the second one but it approached the issue from a different perspective. Whereas the previous study examined accounting in managers' strategic thinking when they were planning the future, the third study explored the role of accounting and management control when different strategic initiatives were already set in motion. More specifically, the aim was to examine management control in the strategic development of business model and managerial innovations. The development of those non-technological innovations presents dynamic and uncertain settings where traditional accounting and calculations are useful to a limited extent. This study was also designed to address the issue from the perspective of managerial work. The aim was to outline what managers consider essential elements of management control in these often iterative and learning-intensive developmental activities. The study was based on the views of 20 managers engaged in strategic development and its control in various organizations. The interview data consisted of the respondents' experiences and project cases involving non-technological innovations. The findings suggested that with managerial and business model innovation, appropriate management control could be established by aligning the innovation being developed with the strategic story of the organization, leveraging co-creational projects and experimentation with close customer contact. The study added a unique perspective to the literature by conceptualizing and offering managerial implications for management control in the context of strategic development of non-technological innovations. The process for writing and publishing this article was faster than it was for the previous ones. Although this was the third sub-study of this dissertation, the final journal article was published before the article of the second sub-study.

The research journey continued after exploring accounting's role in managerial work in general (first study), more specifically in the strategic thinking (second study) and strategic development of innovations (third study). After building the big picture of accounting in managerial work and examining its role in strategic contexts a different empirical approach was taken. The fourth study ("Drawing the premises for personalized learning: Illustrations of management and accounting") was aimed at experimenting with how managers can learn accounting and develop their financial mindset. This study reported a teaching innovation using participant-generated drawings. Experienced managers were asked to produce a drawing to illustrate their work from an accounting perspective. The drawings were then used to make the managerial context of the participants an explicit starting point for their personalized learning. Visualization is a powerful method, but rarely utilized in management education, not to mention in the context of accounting. This study was the first in the sphere of accounting education and research to take drawing seriously as a learning method. The results of the experiment show how the drawing method can be further used as a tool in management education by facilitating the visualization of the managerial contexts participants work within. In a way, the fourth article closed the circle of the research journey, since the research project had started with wondering how managers address accounting issues during their executive studies.

In recent years, I have had various opportunities to present the findings of this research to both academics and practitioners in multiple events. Academic conferences and journal publication processes taught me to appreciate the rigor of academic research work. Executive education teaching sessions and other opportunities to present my work to practitioners have also been very valuable. They have offered enriching discussions with executives in order to reflect the plausibility of the results. Conferences and presentations have also been motivating events and valuable milestones in the process. Preparing for any event to present the research work has always helped the project progress.

1.4 Outline of the dissertation

The overall structure of this dissertation takes the form of five chapters. The report began by outlining the topic under investigation, clarifying the research questions and describing the research journey as a whole. The remaining part of this dissertation proceeds as follows. Section 2 lays out the theoretical dimensions of the study and presents the relevant literature. Section 3 describes the empirical setting and methodological approaches. Section 4 describes the original research papers, summarizing the contents of all four articles. Section 5 elaborates on the study's contribution to the theory, research methodology and practice of management. This discussion section is instrumental in constituting these contributions as a whole and therefore making this dissertation report more than merely a compilation of the original publications. Section 5 also addresses the limitations of the study and suggests avenues for further research.

2 THEORETICAL FOUNDATIONS

This dissertation aims to unravel some of the mysteries surrounding accounting and managerial work. It is not based on a single theory of accounting, but on a set of theoretical approaches that aim to explain the relationship between accounting and managerial work from various perspectives. The main domain of this study is management accounting, which is addressed as an applied science as characterized by (Malmi & Granlund 2009), where the ultimate aim of theory and research is to facilitate attempts to make organizations and societies better off. The following sections describe the theoretical foundations and define certain key concepts that are more specifically addressed in this research.

2.1 Accounting and managerial work

Given the generally recognized importance of financial aspects in successful management, surprisingly few studies have specifically concentrated on investigating the association between accounting and managerial work. Often it is the managers' perspective that gets less attention in academic studies. It has been argued that the whole management research field should more broadly aim for more of an effect on actual practice in organizations (Pfeffer 2007). Moreover, the use of methodologies and theories related to the organizational reality have been suggested to achieve more practical relevance (Will 2012). A number of studies have begun to address management and organizations from a more practical perspective. A recent research stream of research called the 'practice turn' (Ahrens & Chapman 2007, Skærbæk & Tryggestad 2010, Whittington 2011, Sajasalo ym. 2016), focuses on practice in organizational studies. Taken together, this growing body of literature, which recognizes the importance of practice in management and organizations, supports this present study's connection to the practice of management.

The general field of research focusing on practice does not, however, specifically address accounting. In that vein, there have been a number of calls to promote a managerial perspective in accounting research and aligning accounting research more with the actual practice of managerial work. Jönsson (1998) was one of the key initiators in opening the debate by stating that management accounting research lacks empirical input from managerial work. Management accounting has been characterized as being too inward facing (Birnberg 2009) and researchers sometimes choose to stay on the 'safe side' by only trying to understand the practice rather than suggesting how to improve it (ter Bogt & van Helden 2012). Scapens (2006) has stated that research over the decades has provided a clearer understanding of management accounting practices, but the challenge remains of how research can produce relevant insight for practitioners and have more of an impact on practice. Also (Hall 2010) argued that accounting research has produced few studies that seek to really understand how managers engage with accounting information in their work.

Other studies, however, have aimed to address the connection between accounting and the practice of management. Accounting researchers have been advised to assume a more participatory role in organizational problem-solving through, for example, constructive (Kasanen, Lukka & Siitonen 1993, Labro & Tuomela 2003), action and interventionist research (Suomala, Lyly-Yrjänäinen & Lukka 2014), not to mention conventional interpretive case studies (Lukka 2005), emphasizing the nature of the actual reality in organizations. Despite the perceptible drift towards practice-based approaches in management accounting research, existing studies still lack an in-depth, first-hand understanding of accounting from the perspective of managers. In spite of some recently published papers that focus on practicing managers (Goretzki 2013, Mike, Pike Richard & Saudah 2007, Jordan & Messner 2012, Burkert, Fischer & Schäffer 2011), there seems to be little, if any, research focusing on the essence of accounting from the personal standpoint of individual managers. Various reasons have been suggested to explain why only a few recent studies have focused more deeply on practicing managers. Malmi and Grandulnd (2009) concluded that accounting researchers' orientation towards other researchers instead of managers explains accounting's limited effect on practice. Hopwood (2007) expressed concerns about the lack of innovation in accounting research. He suggested that accounting could be studied in its full diversity and complexity if the research community strengthens its links to practitioners. Likewise, Burns, Hopper & Yazdifar (2004) have highlighted the lack of cooperation between business practitioners and educational institutions as a challenge.

Taken together, the studies presented in this section support the notion that there is a need for further research to examine how and why managers use accounting in their work. Existing academic work on the subject has been mostly restricted to case-based research typically examining accounting change and focusing on analysis on an organizational level. Therefore, the individual manager, instead of the organization, was chosen as the focus of this present research. This study responds to the challenges raised by the previous literature by seeking to paint a holistic and relevant picture about the nature of accounting in managerial work.

2.2 The role of accounting in strategic contexts

One of the most prominent areas in aligning accounting with managerial work is to strengthen its connection with strategy activities that managers do. A great deal of literature has focused on exploring the strategic role of accounting, suggesting a pertinent role for accounting in an area such as managerial work. Strategic management accounting (SMA) is an illuminating example of this, with its techniques designed to support the competitive strategy of the organization (Bromwich 1990). Yet it has also been found to be failing in this respect and has not shown undeniably successful diffusion of its methods into organizational practices (Järvenpää 2007, Langfield-Smith 2008, Nixon & Burns 2012). This study explores accounting and control in a strategic context as one of its main areas. More specifically, the role of accounting is examined in managers' strategic thinking, when they strategize in order to create success for the future. Therefore, the concept of *strategic thinking* needs to be specifically addressed.

Previous literature has explored strategic thinking in managerial work (Heracleous 1998, Liedtka 1998, Bonn 2001, Bonn 2005, Tavakoli & Lawton 2005, Nuntamanop, Kauranen & Igel 2013, Sanjay, Swati & Payel 2018), highlighting its aim for explicit business impacts. It has been suggested that strategic thinking should be hypothesis driven (Liedtka 1998), emphasize a rational approach (Bonn 2005) and foster the ability for analytical thinking (Nuntamanop, Kauranen & Igel 2013) as part of strategic thinking. Even though accounting practices have been suggested to be central to organizations and their management (Brouthers & Roozen 1999, Miller & Power 2013), this existing literature on strategic thinking does not outline any specific ways that accounting might play a role in the strategic thinking of managers. Furthermore, the existing literature on accounting and control in strategic contexts has been criticized for concentrating too much on organization-level analysis (Davila, Foster & Oyon 2009, Tervala ym. 2017, Chenhall & Moers 2015). This creates a need to understand individual actors.

Strategic thinking is defined in this study according to Bonn (2005) as "a way of solving strategic problems that combines a rational and convergent approach with creative and divergent thought process." It is the way in which managers think about, view and create the future for the organization and its stakeholders. More specifically, strategic thinking is characterized in this study on an individual level through three elements, which pull together the widely shared perspectives in the literature. First, a holistic understanding of the organizational context (Bonn 2001, Bonn 2005) is included to highlight a systems perspective, a mental model of "how the world works" (Liedtka 1998). The second perspective is visionary and proactive (Bonn 2001, Bonn 2005), suggesting that strategic thinking is fundamentally about developing new ideas (Stacey 1992), seeking innovation and visions regarding the directions that the organization should pursue (Mintzberg 1994). Third, an innovative and creative, business-focused approach to adding customer value (Bonn 2001, Bonn 2005) is included, which is also highlighted by Moon (2013) and Abraham (2005), who describe strategic thinking as finding alternative strategies and business models to create customer value. These three elements, which build on Bonn's (2005) definition and pull together the widely shared perspectives in the literature, are used to define the characteristics of strategic thinking in this study.

The uses of accounting in strategic thinking and decision-making have been explored. Langley (1989) presents one discussion on the variety of reasons for using formal analysis in strategic decision-making. She suggests that analysis could be initiated for information purposes, persuasion and communication, direction and control and symbolism. Another attempt to combine various perspectives on the uses of accounting in strategic contexts into a framework is presented by Kaikkonen (1994). He presents four areas where accounting could play a role in strategic thinking, which can be used to draw together various perspectives presented in the existing literature. First, accounting contributes to the construction of the strategist's own world-picture when an individual applies concepts of accounting in their interpretations of the enterprise. This resonates with research on the strategic alignment of development with corporate strategy (Akroyd, Biswas & Chuang 2016, Slagmulder 1997) as well as the sensemaking perspective, where accounting is seen as shaping organizational life and actors' interpretations of it (Gerdin, Messner & Mouritsen 2014, Puhakka 2017, Miller & Power 2013, Haukedal & Grønhaug 1994, Tillmann & Goddard 2008). Second, accounting has a role in strategic thinking through possible means of analysis and analytical practice. This is consistent with the literature exploring accounting's role in evaluating strategic alternatives, pre-decision management controls (Huikku, Karjalainen & Seppälä 2018) and using analytics in decision-making (e.g. Nutt 1998, Frishammar 2003). Third, accounting may fulfill the need for conviction in alleviating the fundamental sense of uncertainty regarding the future. This echoes with perspectives addressing strategy as a creative interpretation of the future, where accounting and numbers bring plausibility and legitimacy to the setting (e.g. Goretzki 2013, Sajasalo et al. 2016, Weick 1995). Fourth, accounting functions as means of communication, because strategic issues are typically objects of debate and change that are concerned with shared meanings. This resembles Simon's (1995) idea of interactive controls and how management accounting and control systems could be regarded as communication platforms on strategic issues (Heidmann, Schäffer & Strahringer 2008, Pärl 2014).

In addition to the research reviewed before, previous literature has also pointed to the various disadvantages of accounting in strategic contexts (e.g Denis, Langley & Rouleau 2006, Mastilak et al. 2012). Critical views have been presented about the use of accounting and calculative practices in future-oriented strategic planning (Cooper, Crowther & Carter 2001, Whittle & Mueller 2010, Harris & Tayler 2019) and the low involvement of management accounting in strategic decision-making (Brandau & Hoffjan 2010, Saukkonen, Laine & Suomala 2018). Taken together, the studies presented thus far provide evidence that accounting is seen to have both positive and negative effects in strategic contexts. A number of researchers have recently leveraged both approaches to the issue and addressed this dual nature of management accounting and control and the tensions they create (Jordan & Messner 2012, Adler 2012, Lövstål & Jontoft 2017, Adler & Chen 2011). In all, research has approached the role of accounting in strategic contexts from various perspectives, but the connections in managers' strategic thinking to accounting issues are largely unexplored in the existing literature. Another essential issue is the phase when strategic activities proceed from strategic thinking to the actual development of innovations.

2.3 Management control and development of innovations

In addition to the context of strategic thinking and decision-making described in the section 2.2, this research explores the role of accounting and management control in the ongoing developmental activities in organizations. This focuses attention on what happens after the initial decisions are made and development work has been set in motion. This "mechanism of getting forward," as suggested by Mouritsen and Kreiner (2016), is an essential perspective on accounting and control because it adds a temporal dimension to the whole context of strategic decision-making.

One key concept of this present research is management control. It becomes essential when examining how managers engage with the unfolding world of ongoing strategic development. However, the traditional view of management control has seen it merely as a tool for the implementation and control of pre-assigned goals to reduce variation. Anthony defines management control (1965, cited in Langfield-Smith, (1997) as "the process of assuring that resources are obtained and used effectively and efficiently in the accomplishment of the organisation's objectives." In its backwards-looking orientation, the traditional view of management control is not optimally compatible in the context of developing innovations. This study examines management control in the context of strategic development, processes and tasks aiming at strategically developing an organization, as well as its products and activities. Therefore, *management control* will be used in this dissertation in a broad sense according to Merchant and Otley (2007) to refer to all things managers do to ensure that their organizations perform well. In these broad terms, a management control system is designed to help an organization adapt to the environment in which it is located and to deliver the key results desired by its stakeholder groups.

There has been a change in perspective in the academic literature regarding management control. The value of traditional management control and making detailed plans when everybody knows they will be revised anyway has been questioned (Anthony et al. 2014). More flexible management control has been suggested. This means pursuing a balance between a rigid set guidelines and autonomous discretion along the way (Detzen et al. 2018), constituting a state of "firmness and flexibility" (Tatikonda & Rosenthal 2000). In their review of the literature, Barros and Ferreira (2019) found a paradigm shift regarding management control systems (MCS) and innovation. There is a growing amount of research (e.g. Adler & Borys 1996, Ylinen & Gullkvist 2014, Adler & Chen 2011, Healy, Cleary & Walsh 2018) highlighting the supportive and positive role of MCSs in innovation activities. Furthermore, Chenhall and Moers (2015) note that the existing research has concentrated mainly on the technological procedures and administrative structures related to innovation on an organizational level.

Building on the broad definition of management control, Simons' (1995, 2000) work on the levers of control is essential from this study's standpoint. Simons' framework introduced four key constructs (belief systems, boundary systems, interactive control systems, diagnostic control systems) for management control. According to Simons, the use of each construct (i.e. each lever) has different implications. Belief systems that communicate the mission, vision and values of a business are aimed to inspire and direct the organization towards new opportunities. Boundary systems represent a statement of what the company is not going to do, therefore setting limits on innovation activities and opportunity seeking. Diagnostic control systems monitor performance against set targets and focus on feedback control. Interactive use of controls in turn, is aimed at stimulating learning and exploring the strategic uncertainties needed for innovation. Since the introduction of the original levers of control framework, some scholars have examined the development in that field. One essential outcome from those reviews is that because Simons' control framework focuses on formal controls, calls for more research on the subjective mechanisms and informal systems of control have been made (Jansen, Van Den Bosch & Volberda 2006, Reimer, Van Doorn & Heyden 2016, Martyn, Sweeney & Curtis 2016).

In addition to the evolution in the approaches related to management control, the paradigm change regarding models for managing development work is also relevant for this research. The well-established stage-gate controls model (Cooper, 1990), widely used in product innovation projects and which divides the development into pre-defined stages, has been criticized for restricting learning and reducing project flexibility (Sethi & Iqbal 2008). Recently, an agile development approach fostering a more interactive development process has spread from software development to all developmental and innovation activities in organizations (Beck et al. 2001, Denning 2016, Rigby, Sutherland & Takeuchi 2016, Denning 2018). This shift, partly reflecting the change in the type of innovations organizations pursue, has implications for the management control of innovation processes.

In addition to management control, the concept of innovation in its various forms is essential for this study, which explores future-oriented development settings. This study adopts a broad definition of innovation from Davila et al. (2009), seeing it as a pursuit of opportunities for significant new value creation. However, in addition to this general definition, certain more specific classifications of innovations are useful for the purpose of this study. For example, innovations have been categorized as being either explorative or exploitative by nature (Jansen, Van Den Bosch & Volberda 2006, March 1991). Explorative innovation typically pursues new knowledge, products and services for new customers; it consists of exploring new possibilities. Exploitative innovation, in turn, concentrates on developing and extending an existing business, exploiting existing continuities. This criterion of the degree of newness of the innovation can also be referred to as incremental or radical.

Innovations can also be categorized based on their technological emphasis and target. Innovation is often approached as the introduction of new goods or new methods of production. Product innovation is considered to be market driven and to include the innovation of new products, whereas process innovation introduces new elements to production and operations, often with an efficiency-driven internal focus (Damanpour & Gopalakrishnan 2001). However, innovation can also be approached from a less technological standpoint, with the aim of re-shaping a firm's organizational procedures and managerial activities. In addition to technologically focused product and process innovation, the OECD (2005) has defined marketing innovation and organizational innovation as innovation categories. Organizational innovation deals with people, re-shaping a firm's procedures and managerial activities (Lopez-Valeiras, Gonzalez-Sanchez & Gomez-Conde 2016, Camisón & Villar-López 2014). Birkinshaw and Moll (2009), in turn, define management innovation as the introduction of management practices that are new to the firm and intended to enhance firm performance. Common to various definitions of organizational and managerial innovation in the existing literature is that they focus on an organization's management processes and structures, constituting the rules and routines by which work is done and an organization operates.

Non-technological innovation can also assume other forms. Business model innovation has been considered essential in describing how companies create, deliver and capture value from their product innovations (Chesbrough 2010). Business model innovation can be disruptive, or proceed in a more subtle incremental way when company is developing the way it does business. Typically, a business model concept explores what a company does as well also how it does it. From a strategic perspective, it has been suggested that organizations should institutionalize the learning processes of continually assessing and updating the business model (Biloshapka & Osiyevskyy 2018). In this vain, innovation activities are not seen as some randomly occurring states of creativity, but instead as manageable organizational process of strategic development.

Specific characterizations of innovations are used to define the specific forms of strategic development examined in this study. Managerial innovation is defined according to Damanpour and Aravind (Damanpour & Aravind 2012) as new approaches to knowledge for performing the work of management and new processes that produce changes in an organization's strategy, structure, administrative procedures and systems. The term *business model innovation* is defined as non-technological innovation that alters the way an organization creates and captures value (Chesbrough 2007, Teece 2010, Markides 2006, Zott & Amit 2010, Zott, Amit & Massa 2011).

Overall, the interplay of management accounting and innovation has been identified as being insufficiently understood by various researchers (Chenhall & Moers 2015, Moll 2015, Nixon 1998, Bisbe & Otley 2004, Davila, A., Foster & Oyon 2009). The initial phase where innovative ideas are generated and argued for has received a considerable amount of attention in previous research (Heidmann, Schäffer & Strahringer 2008, Lechner & Floyd 2007, Birkinshaw, Julian 1997, Dutton et al. 2001, Whittle & Mueller 2010). Furthermore, prior research on innovations and management control has mainly concentrated on new product development (Duhamel, Reboud & Santi 2014, Taipaleenmäki 2014, Nixon 1998, Jørgensen & Messner 2010, Davila, T. 2000, Detzen et al. 2018, Kohtamäki ym. 2020). There is a need for research investigating other kinds of innovations and approaches for managing innovation activities in organizations. This research examines non-technological managerial and business model innovation from a managerial work perspective.

2.4 Learning accounting from a managerial work perspective

Despite the various calls to approach accounting from a more managerial work standpoint, (see section 2.1, e.g. Jönsson 1998, Hall 2010, Hopwood 2007, Chua 2007, Malmi 2005) managers' understandings of accounting remains an area with a limited understanding. Few writers have been able to draw on any systematic research into managers' understandings of accounting, especially on how a practicing manager's financial mindset is constituted. Learning as such is a commonly used concept which can be defined in multiple ways. The definition proposed by Kolb (1984) is useful in relation to this research's focus on experienced managers. Kolb's experiential learning model defines learning as a cyclical process where knowledge is created through the transformation of experience. This perspective suggests that managers' understanding is formed through their experiences from managerial work.

The challenge of understanding the context of managerial work has been addressed in learning and education research. A considerable amount of literature has brought forward the inadequacy of not only accounting education, but raised concerns regarding the relevance of the whole business education from the perspective of the practice of managerial work (Asik-Dizdar 2015, Bennis & O'Toole 2005, Mintzberg 2004, Pfeffer & Fong 2002, Khurana 2007). The main claim of this criticism is that traditional classroom teaching is limited in its ability to address managerial work and its challenges in their full complexity, as they present themselves to the manager. Moreover, concerns have been raised regarding the competencies developed by business education, stating that they respond poorly to the actual needs of practicing managers (David, David & David 2011, Rubin & Dierdorff 2009). In addition, business school pedagogy has been claimed to be based too heavily on academic theoretical content rather than on the context of management practice (Minocha, Reynolds & Hristov 2017).

In addition to examining the challenges of postgraduate management education in general, a considerable amount of work has been done specifically on examining the adequacy of accounting education and its pedagogical standpoints. Böer (2000) reviewed management accounting education and suggested that what is taught in accounting courses needs to change. He stated that accounting books mainly present things that management accountants find interesting, instead of issues managers consider important in their work. In a similar vein, Hermanson et al. (1998) have examined the accounting component in executive MBA (EMBA) programs in the USA. They found accounting was an important part of EMBA curricula but that the coverage of accounting material seemed fairly traditional. Accounting academics have also been criticized for favoring methodologies from the natural sciences, leading to a reduction in the practical relevance of accounting research and education (Cohen & Holder - Webb 2006).

In addition to the content focus, previous literature has criticized the pedagogical choices of accounting education. It has been suggested that accounting education researchers should engage more with practitioners (Jones 2017). Rebele and St. Pierre (2015) also state that accounting education research exhibits signs of stagnation, that it is merely describing the status quo and lacks any new contribution to and impact on the practice of accounting education.

Some scholars have offered solutions to the observed challenges of accounting education. An integrative accounting course has been introduced to improve the relevance and pedagogy of teaching accounting in MBA programs (Cooper, T., Downer & Faseruk 2013). Project-based group work has been trialed with full-time MBA students to increase the real-world relevance of the learning experience (Collett 2000). Creative writing storytelling as a non-traditional tool in learning accounting has been used (Krom & Williams 2011), as have analogies to clarify accounting principles to MBA students and to help them engage with the conceptual underpinnings of accounting (Tucker 2017). These approaches aim to shift the learning emphasis from producing accounting information into how and in which contexts it should be used. However, they still mainly focus on the accounting content of the teaching instead of adopting the student's managerial context as a starting point for learning accounting.

Experienced participants working in managerial positions can be demanding students. Accounting educators have reported concerns about the teaching of accounting in EMBA programs, where participants have been observed to be unmotivated, even reluctant in engaging with the accounting content. The lack of explanations for why something is as it is in course design might create tensions with the preconceptions of adult executive learners. Pastra (2009) suggests that course facilitators should explain why the course content, learning methods and assessment practices were chosen in order to clarify for students how the choices were made to improve learning. Craig (2001) takes an even stronger stance by reporting an accounting teaching case from an EMBA course where students protested against the learning methods and a workload that they found overly demanding. Overall, teachers and executive students sometimes have different socially constructed understandings of what teaching and accounting are (Pastra 2009). Pedagogical approaches better suited for executive learners might be developed through integrating accounting learning with their personal experience in real-life organizational and business settings.

Mintzberg (2004) has stated that the main challenge of management education is that management is a craft, something to be honed via experience. This suggests that management education becomes significantly more impactful if it draws on the managerial experience of the participants. Several suggestions have been made to develop management education for experienced learners in a direction that would recognize the experience of the participants as a strength (Garvin 2007, Minocha, Reynolds & Hristov 2017, De Déa Roglio & Light 2009, Ruane 2016, Currie & Knights 2003, Tushman et al. 2007). This idea of learning relies on educators incorporating the experience and contexts of the participants into the learning process (De Déa Roglio & Light 2009, Ruane 2016). However, there remains a deficit in pedagogical approaches in personalized learning when taking the unique setting of each adult learner into consideration.

With experienced participants, a personalized learning approach highlights taking the unique setting of each executive learner into consideration to optimize the learning process. Tushman et al. (2007) suggested an action learning approach in emphasizing the importance of the experience of the participants in executive education, and they suggest that doing so could restore the legitimacy of business education. On the other hand, merely aligning accounting education with the participants' experience is not unambiguously straightforward either. Currie and Knights (2003) emphasize establishing connections between the content taught and the managerial experience of MBA students through critical pedagogy. They suggest that challenging participants' assumptions regarding their managerial context can form a basis for learning.

Essential existing work from this study's perspective has been done in examining the characteristics that make executive teaching and learning unique. Garvin (2007) has outlined several characteristics that make executive teaching different from a conventional MBA education. He describes executive teaching as making explicit efforts to draw out students' experiences, involving sharing problems they have encountered, and aligning learning with participants' managerial work. Executive learners typically want more than illustrative and overly general examples. They want their learning to be connected to their work, helping them to improve in their own position and to develop their organizations. Personalized learning in executive education is a wider approach than merely acknowledging participants' previous experience. In addition to the participants' professional background, also their current managerial challenges and current situation form premises for their learning. When looking at management learning from this perspective, formal management education can be seen only as the tip of the learning iceberg, and most learning happens in the working context (Fox 1997). A situated conceptualization of learning encourages a focus on the practice of management, such as organizational characteristics, interactive collaboration with peers and power relations (Contu & Willmott 2003). This *in situ* learning in the worlds of practice is essential in the context of executive education. Minocha et al. (2017) propose the concept of "practice intelligence," a blend of professional practice, knowledge, and the business organization context. This suggests that managerial problems and contexts should be taken as a starting point for learning, instead of academic contents and theory. This learner-centric approach is most evidently to be applied in executive education where participants are experienced managers studying part-time alongside their managerial responsibilities.

Overall, existing research on learning accounting has accused the management education field of being overly focused on traditional teaching models and approaches (Asik-Dizdar 2015, Bennis & O'Toole 2005, Khurana 2007, Mintzberg 2004, Pfeffer & Fong 2002, David, David & David 2011, Rubin & Dierdorff 2009, Minocha, Reynolds & Hristov 2017, Miley & Read 2019) and, more specifically, outlined the challenges in postgraduate accounting education (Böer 2000, Hermanson, Hermanson & Alsup 1998, Pastra 2009, Craig 2001). Despite some suggested ways in which teaching and learning could be developed (Collett 2000, Cooper, Downer & Faseruk 2013, Garvin 2007), there is little existing work on how executive learners' working life and managerial area of responsibility could offer a starting point for learning.

Previous research has pointed that a manager's understanding of accounting is influential in managerial work. A manager's background and experience are found to affect the organizational design and management control systems that are chosen (Akroyd, Chris & Kober 2020). And accounting in managerial work can be seen forming (in addition to informing about) organizational reality (Gerdin, Messner & Mouritsen 2014). This highlights the significance of managers' understanding and mindset on accounting issues. Organizational design is not merely an objective and rational process, but also influenced by managers' sensemaking. In addition to the official information and accounting systems, managers draw information from a variety of sources (Hall 2010), sometimes from systems that are not officially sanctioned by the organization, but self-generated. These accounting systems are sometimes characterized as vernacular accounting (Kilfoyle, Richardson & MacDonald 2013, Goretzki, Strauss & Wiegmann 2018), accounting and control systems that local actors use. This research addresses managers' relationship with accounting exceeding this approach through the concept of *financial mindset*. A mindset can be described as "a person's ways of thinking and their opinions" (Cambridge Dictionary 2020). In this research, a manager's financial mindset is defined holistically as a manager's ways of thinking about accounting. This concept is closely connected to experiential learning. A manager's financial mindset can be seen to evolve through experience and interaction, shaping a manager's interpretation and understanding of accounting.

The overall aim of this research is to explore managers' understandings of the strategic role of accounting in their work. One of its premises is that managers' financial mindset can be deliberately addressed with self-reflection and further developed through adequate learning processes. Taking the perspective of managers', and not accounting professionals, in examining the accounting mindset, this research does not approach accounting as a specialized organizational activity carried out by accountants. On the contrary, it views accounting as a significant part of management, embedded into managerial activities in a variety of ways.

3 METHODOLOGY

3.1 The research approach and philosophical assumptions

This section identifies the starting points of this research, outlines its empirical settings and describes the data analysis process. It is obvious that no research project starts out as a tabula rasa, completely lacking any choices and mental presuppositions. In any research, when these inevitable conceptual starting points are made transparent, it helps avoid being ignorant of and unreflective about its philosophical, methodological and theoretical underpinnings (Lukka 2010). This research project is motivated by the need to bring more empirical input from managerial work into the field of management accounting research, a call to action presented by previous researchers (Jönsson 1998, Hall 2010, Malmi & Granlund 2009). A second impetus for the design of the methodological approaches is the assumption that we need to understand management accounting from a more multidimensional perspective as part of managerial work. The aim is to understand the everyday practice of accounting by looking at the actors', that is, the practicing managers', perceptions and definitions of the situation (Chua 1986).

Investigating accounting from the perspective of managerial work is a demanding task. This study looks at the field with a qualitative research approach, utilizing multiple empirical data sets and methodological approaches. Within the qualitative research tradition, there are various views on how to design qualitative research and appropriately use research approaches and methods. In general, it is typical for qualitative research to seek or to explore a phenomenon through rather open-ended research questions. This research project also started with a sub-study that had a rather generally formulated aim, drawing inspiration from the methodology of grounded theory (Glaser, Barney & Strauss 1967). Then the project proceeded into more refined and directed methodological approaches, utilizing various qualitative data sets (written material, interviews, drawings).

Overall, this study can be characterized as interpretative accounting research. In the interpretative methodological approach, the subjective meanings that people attach to things are taken seriously and it is recognized that the world can be viewed as socially constructed (Lukka 2010). In this approach, interpretation describing the meaning of the phenomenon is a condition for creating a profound understanding of something. This present research seeks understanding via the perspectives of the actors enmeshed in their meaning-making activities, through exploring how managers make sense of the issues in their professional life. By collecting and systematically analyzing qualitative data, the aim is to gain insight into how managers perceive and develop their meanings of the phenomenon of accounting.

The ontological starting point of this research is that the context of the study (managerial work) is approached primarily as a social reality that is created through an individual's own interpretation, intentions, and social interaction. However, the context of managerial work in this research applies not only to the individual's own interpretation, but also to external organizational settings where accounting practices take place. Therefore, this present interpretative research, grounded as it is on social constructionism, approaches the phenomenon with a moderate form of realism as well (Lukka & Modell 2010, Kakkuri-Knuuttila, Lukka & Kuorikoski 2008). This acknowledges that the use of accounting in the context of managerial work does not occur merely in the minds of people as ever-changing subjective experiences, but also becomes objectified in its application. The aim of this research is to focus on the uniqueness of managers' understandings of accounting. However, in doing so, this study seeks to elaborate explanations and implications exceeding only the individuals' subjective mental states. This leads to explainable and tangible consequences of the use of accounting.

The following table summarizes the research approaches, empirical data sets and data analysis methods utilized in this research. The following sections of this chapter describe in more detail the collection of the empirical material and structured steps in their analysis regarding each data set.

TABLE 1 Summary of methodological research approaches and data sets

Type of research material	Amount of empirical data	Year of data collection	Methodological approach	Publications based on the empirical material
Narrative essay texts	48 essays, 214 pages in total	2012	Inductive analysis with grounded theory approach	"Narratives on the Accounting World-view of Practising Managers" (*Nordic Journal of Business*, 2017, Vol. 66, issue 4)
EMBA final theses reports	108 reports, of which 26 reports were selected for closer examination, 1,754 pages in total	2013	Summative qualitative content analysis	"Investing in strategic development: Management control of business model and managerial innovations" *(Qualitative Research in Accounting & Management,* 2018, Vol. 15, issue 2*)* "Strategic thinking and accounting: potentials and pitfalls from a managerial perspective" (*Journal of Management Control*, 2019, Vol. 30, issue 3)
Qualitative semi-structured interviews	23 interviews, 27 hours and 47 minutes in total	2015	Directed and conventional inductive qualitative content analysis	"Investing in strategic development: Management control of business model and managerial innovations" *(Qualitative Research in Accounting & Management,* 2018, Vol. 15, issue 2*)* "Strategic thinking and accounting: potentials and pitfalls from a managerial perspective" (Journal of Management Control, 2019, Vol. 30, issue 3)
Participant-generated drawings	20 drawings including written descriptions and annotations	2017	Qualitative interpretative analysis	"Drawing the premises for personalized learning: Illustrations of management and accounting" *(Journal of accounting Education 2021,* Vol. 54, Issue 1*)*

3.2 Empirical data

The empirical material for this research was collected through the University of Jyväskylä executive MBA education. The program attracts executive students with substantial professional experience. It holds three international quality accreditations (AMBA, AACSB, BGA). The respondents of this research's data were participants and graduates of the Executive MBA program. They proved able to share their experiences and views openly and extensively.

Narrative essay texts

The first data set was collected in 2012 from two separate EMBA classes while the students were doing their studies. These data consisted of unique qualitative narrative texts written by managers themselves. The respondents wrote an essay about accounting from the perspective of their managerial work. The aim of the research was explained to the respondents with a presentation, and they were given a document template for the exercise, including the instructions for the assignment. The respondents had one month to write and return the essay to the researcher. They were specifically advised to address in their texts the topic of managers and accounting from the three given perspectives. This threefold structure allowed richer data to be collected and was used to separate the essay data collection from a traditional classroom exercise in which people are often removed from their organizational and professional contexts. It directed the respondents to think about accounting based on the following perspectives: (a) learning experiences reflecting how their relationship with and understanding of accounting has evolved during their careers; (b) organizational development describing managerial needs for accounting development in its applied organizational context; and (c) personal competence building, framing the essential competence development themes and areas for managers.

The average age of the respondents was 42 years. They had an average of 14 years of experience working in managerial positions. Of the 48 respondents, 34 were male. The 48 respondents came from 40 organizations of varying sizes and industries, including the public sector. The essays included experiences and views based on the respondents' entire previous working experience. Therefore, the opinions and interpretations in this study were based on many organizational realities more than they were based on the amount of different organizations the respondents were currently working for.

The essays produced fascinating research material. Although it may be easy to speak at length about a certain topic, conceptualizing one's understanding in writing demands a more considered thought process. Compared to an interview, the writing process also allows time to reflect on one's views and the possibility of structuring the output across several periods of time. Combined, the material consisted of 214 pages of written text (4.5 pages per essay, on average).

EMBA final theses reports

The second data set of this research consisted of executive MBA program final theses reports. This empirical material was different in the sense that it already existed, without any initiative or influence by the researcher in producing it. The data were collected among EMBA final thesis projects evaluated between March 2011 and March 2014. The amount of EMBA graduates during that timeframe was 108. All 108 EMBA theses were analyzed and the ones that met the following three criteria qualified for the group of theses serving as empirical material for this study, aiming to outline the strategic role of accounting in managerial work. First, the chosen thesis had to include a holistic understanding of the organizational context. When studying accounting from the strategic managerial perspective, the inclusion of holistic understanding of the organizational context is well grounded. Without linking strategizing to the future of a specific organization, the managerial responsibilities, accountability and the use of resources would be excluded from the picture. Second, a visionary and proactive perspective was sought. This future orientation excluded reports that reflected only on past development and that would possibly include accounting information and perspectives produced only after the original chain of events. Third, an innovative business-focused approach aiming to add customer value was included as a criterion. The goal was to have only those creative reports, which showed a clear connection to the future business models of the organization. Internal change plans or projects were excluded as were those theses that focused merely on leadership and management issues and which lacked strategic connection to the organization's business activities.

The three criteria formed a strict filter for choosing the reports that would be examined in order to understand managers' use of accounting in a strategic context. There were 26 theses that met all three criteria. Overall, the amount of material was extensive. The length of the 26 reports was, on average, 67 pages, for a total of 1,754 pages. The final theses were applied to various organizations' strategic development and the writers clearly had familiarity and real-life experience with the goal of the study and could contribute to conceptualizing accounting in the context of managerial work from a strategic perspective. Therefore, the threefold lens derived from the theory for choosing the EMBA theses worked also in selecting the respondents for interviews. The collection and nature of this data set is described in the following.

Semi-structured interviews

The researchers contacted all 26 managers selected with the threefold lens derived from the theory and asked to interview them. All stated their willingness to participate. One respondent, however, was unavailable to attend an interview for practical reasons during the period of data collection. In addition, one criterion for choosing the respondents was added, which was that the respondents' current managerial work at the time of the interview had to be related to strategic issues and business development. This was to ensure that all the respondents could provide a topical and comprehensive personal professional view of the issues related to the research's aim. Two respondents were omitted from the interviews because of this criterion, because their job descriptions had changed since their EMBA graduation and their professional role did not currently include managerial responsibilities with a strategic emphasis. The primary aim of the interviews was to explore the role of accounting in the respondents' managerial work, especially from a strategic perspective. Ultimately, 23 managers were interviewed during March to June 2015.

The interviews were conducted in the respondents' workplaces individually in person, recorded and transcribed. Anonymity was guaranteed to the respondents before they participated in the interviews. The interviews lasted, on average, for 1 h and 8 min (shortest: 41 min; longest: 1 h and 36 min) and in total 27 h and 47 min. The respondents were experienced managers and had extensive experience in designing and carrying out strategic development in their work. Fifteen interviewees currently held a position that included the title of director (e.g. managing director, development director), and seven held other managerial positions. In addition to the EMBA which they had all more recently completed, 9 interviewees held another master's level degree, 13 held a bachelor's or professional vocational degree, and 1 had a doctoral degree.

Rather open-ended questions were chosen to guide the course of the interviews. The interview themes were structured based on the literature review and categorized by reflecting managerial work, strategic thinking and accounting and management control of development work. The aim was to encourage respondents to share practices they use and experiences they have had exceeding the officially set procedures in their organizations. In addition, the order of the topics discussed in interviews supported the aim of gaining their personal managerial view of the issue. The questions covered more general questions related to their managerial work and accounting and then progressed in stages to the field of strategic thinking and accounting comprehensively. Information about the respondents' EMBA projects was covered at the end of the interviews as one example of strategy-related initiatives, so that experiences and characteristics from that specific case would not direct the whole course of the discussion. The topic of accounting was approached without using any limiting, though well-established, concepts such as financial accounting or management accounting as a starting point. However, even though the data collection was not limited to management accounting, the respondents primarily addressed the phenomena found in the management accounting field.

Participant-generated drawings

The fourth data set of this research consisted of participant-generated drawings. Also these data were collected through the University of Jyväskylä Executive MBA program. The aim was to explore the use of drawing to illustrate participants' work from an accounting perspective. This placed an emphasis on the selected participants' professional profile since their current work role is the necessity on which the visual representation can be built. The drawing assignment through which the data was collected was introduced in an EMBA accounting course in fall 2017.

The respondents were given an assignment to produce a drawing illustrating their managerial work from an accounting perspective. The drawings were then analyzed and used to make the managerial context of the participants the explicit starting point for personalized executive learning. The average age of the 20 participants was 43.5 years and they represented various fields of industries, including the public sector. All the participants in the EMBA accounting course in question were experienced managers studying part-time alongside their managerial work, so they were therefore eligible to be included in the experiment.

The respondents were not forewarned about the assignment. The data collection was implemented at the beginning of the accounting course, so that the content of the course would not affect the respondents' thinking. The assignment was explained to the participants, and it was stressed that the aim was not to elicit skillfully crafted artistic drawings, but instead visualizations that genuinely reflect their view on their work from an accounting perspective. The participants were guaranteed that their input would remain anonymous. No students expressed reluctance to participate in the experiment and all the 20 respondents produced drawings according to the given instructions. The time allotted for the drawing activity was 20 minutes. The respondents were provided with several sheets of paper, and informed they were permitted to make drafts or sketches if they chose to. In addition to the final illustration, the respondents largely used the offered opportunity to provide further information about their drawing in writing.

3.3 Data analysis

Narrative essay texts

Data analysis of the essay texts was conducted with a qualitative research approach developed in grounded theory. The analysis was done in three stages. First, the essays were read without an attempt to identify themes or make conclusions. The idea was to form an overall picture of the data and to make preliminary remarks on the texts, pinpointing highlights in the respondents' stories. Then the texts were read again. According to the assignment, the essays addressed accounting from three perspectives: based on the participants' past real-life experiences, from their organization's developmental perspective and as a key competence area for them professionally. On the second reading, observations were made on the individual texts and placed into three columns, each representing one of the key perspectives of the research. This way, the findings from the texts were set forth as code lists, again without any effort to form themes or exclude anything. The fact that the respondents had time to reflect upon their experiences, express themselves and come up with conclusions also produced rather refined material. In the third stage, the data were scrutinized in order to identify themes using a versatile cutting and sorting (Ryan & Bernard 2003) technique in arranging expressions into groups of items that went together.

Two essay sets were collected at different times during the autumn of 2012. Both sets of essays were analyzed separately at first. This enabled the researchers to take some distance from the data before collecting and coding the next set. Gathering the data in two phases increased flexibility and made the process of data analysis more iterative because it doubled the analysis phase before making final conclusions. The preliminarily themes from each data set were also presented to the respondents to ensure consensual validation (Patton 2002) of the results. Quality in the interpretation of the data was also sought by inviting several experienced qualitative researchers in the analysis process with both sets of data. Eventually, a classification system of the data and theoretical constructs started to emerge.

EMBA final theses reports

The EMBA theses projects and their specialization formed the primary lens for choosing the managers as respondents for the interviews. However, these project reports were first analyzed using qualitative content analysis (QCA), which classifies data into fewer content categories, thereby providing a meaningful interpretation of the topic (Weber 1990, Patton 2002). QCA can be applied with three distinct approaches: summative, directed and conventional (Hsieh & Shannon 2005). This research process utilized summative content analysis in examining the extent which the managers explicitly used accounting frameworks and terminology in their strategy-related final thesis reports. The final thesis reports were also categorized using the theoretical concepts and definitions of innovation. Some of their more specific characteristics enabled them to be further categorized into four sub-types.

Overall, all reports included a holistic understanding of organizational context, were proactive and visionary and had an innovative business-focused approach, yet their approaches to strategic development differed. The examination and analysis of the reports was used to inform the interviews, in which the respondents' final thesis was addressed as one case of strategic development and accounting. All the respondents have had a clear chief managerial role in their particular project. The average length of the reports was 66 pages.

Semi-structured interviews

Qualitative content analysis (QCA) is systematic (Schreier 2014) but it also makes it possible to leverage conceptual and analytical flexibility (Duriau, Reger & Pfarrer 2007). Interviews were analyzed in three stages by applying directed and conventional qualitative content analysis (Hsieh & Shannon 2005). The first two analyses were conducted in order to examine managers' use and lack of use of accounting in their strategic thinking. Interview data were approached with two dimensions featuring distinct subcategories, capturing only one aspect of the data at a time. First, a directed content analysis derived from existing theory was utilized in defining key concepts on managers' use of accounting in the context of strategic thinking. The coding categories for this were created in a concept-driven way from existing theory, using Kaikkonen's (1994) theoretical framework as a basis for organizing the data.

The second analysis of the interview data was conventional content analysis with codes more inductively derived from the data. This was used to describe managers' views on the disadvantages and reasons for not using accounting in strategic thinking. In qualitative content analysis, the coding frame is at the heart of the method. In this second conventional and more inductive content analysis of the interview data, the code development and application was performed consecutively and separately. The material was first coded in order to translate all meanings in the material that were relevant to the research to the categories of a coding frame. All the interview material was double-coded and the analysis was implemented according to the qualitative content analysis requirements for unidimensionality and mutual exclusiveness for coding frames (Schreier 2014).

The third analysis of the interview data was done in order to examine the management control of ongoing development work in organizations. The essential themes of the management control of non-technological innovation were created again in a data-driven way using conventional qualitative content analysis. All meanings in the material that were of interest to the research question (i.e. What do experienced managers consider essential elements of management control in the strategic development of non-technological innovations?) were translated into the categories of a coding frame. The coding frame was created using a procedure of subsumption (Schreier 2012) by adding data-driven subcategories and subsuming those new subcategories into already existing subcategories when they failed to add anything new. This data-driven derived coding frame was saturated by definition, meaning that each formed concept of management control was pronounced in multiple interviews.

Participant-generated drawings

The production of the fourth data set of this research utilized research-initiated production of visual data and meanings (Pauwels 2010). This allowed rather contextualized material to be produced. The researchers' role was essential in both facilitating the drawing experiment and analyzing the data. Researchers prepared the drawing instruction, supervised the exercise, collected, analyzed and interpreted the drawings and facilitated the ensuing discussion of the findings with the respondents. However, the researchers aimed to guide the drawing process as little as possible. The aim was to examine how managers address an assignment like this, and how they visualize their work from an accounting perspective. Respondents were also asked to write briefly about their current managerial role and to describe their drawing in writing. These further contextual explanations (Copeland & Agosto 2012) were collected and analyzed to make interpretations of the illustrations more profound and reliable.

The drawings were first examined to determine how they were constructed to express their message. This was done by exploring qualitative patterns and themes (Silverman 2001) in the material. The process was also aided by utilizing the written descriptions of the drawings provided by the respondents. First the data were labeled with initial theme descriptions. Then the drawings were categorized according to how the managers approached the issue. This was done using content analysis in the context of images (Franzosi 2004), which was carried out as suggested by Merriman and Guerin (2006), as a qualitative exploration of what was drawn, as well as quantitatively examining how often particular themes or categories appeared.

An essential part of the data analysis was also reviewing the initial findings and their interpretations with participants (Hatch 2002). The results were presented to the respondents a month later in order to acquire a better understanding of the illustrations and linking the ensuing discussion to contemporary accounting topics and frameworks. This collective construal approach, where participants discussed the findings with the researchers, provided further understanding about the participants' experiences of the implementation and outcomes of the learning experiment. After this consensual validation with the respondents (Patton 2002), the data were analyzed once more. The final results were then formulated.

4 OVERVIEW OF THE ORIGINAL STUDIES

This section summarizes the content of the four articles that this dissertation consists of. Two of the articles have been single authored by the doctoral candidate. Two articles have been co-authored with other researchers. The first article ("Narratives on the accounting worldview of practicing managers") was co-authored with Professor Marko Järvenpää, who was involved in designing the methodological approach and data collection and participated in writing the submitted versions of the manuscript. The fourth article ("Drawing the premises for personalized learning: Illustrations of management and accounting") was co-authored with Dr. Ari Manninen, whose accounting course was used to collect the drawing data. Also in the two co-authored articles the doctoral candidate has had the leading role in designing and carrying out the research, writing the articles and has been the correspondent first author of the finalized publications. The following table summarizes the four articles that make up this dissertation.

TABLE 2 Publications of this dissertation

Final publication	Focus of the study	Methodological and empirical approach	Main findings and outcomes	Academic conference presentations
Aaltola, P., Järvenpää, M. 2017 "Narratives on the accounting worldview of practising managers" (*Nordic Journal of Business*, Vol. 66, issue 4)	Enhancing the understanding of managerial work and accounting through exploring how managers view accounting in their work.	Interpretative grounded theory approach. Data consists of 48 essay texts written by managers.	Four-dimensional framework for the worldview of practicing managers regarding accounting, with an emphasis on the multidimensional nature of managerial work.	The European Network for Research in Organisational & Accounting Change ENROAC Conference 2013, Jyväskylä, Finland European Accounting Association Annual Congress 2014, Tallinn, Estonia
Aaltola, P. 2019 "Strategic thinking and accounting: potentials and pitfalls from a managerial perspective" (*Journal of Management Control*, Vol. 30, issue 3)	Exploring the role of accounting in managers' strategic thinking as they generate ideas for business development and strategize in order to create success for the future.	Interpretative study utilizing qualitative content analysis. Data consist of 26 EMBA final theses in the field of strategy and 23 interviews.	Framework presenting the dual nature of accounting in strategic contexts. Outlining the benefits and pitfalls of accounting for strategic thinking constituting a paradoxical duality that cannot be fully solved, but must be addressed by managers.	Summer Seminar of Finnish Economists 2015, Jyväskylä Finland European Accounting Association Annual Congress 2016, Maastricht, Netherlands Annual Meeting of the Academy of Management 2016, Anaheim, USA
Aaltola, P. 2018 "Investing in strategic development: Management control of business model and managerial innova-tions" (*Qualitative Research in Accounting & Management*, Vol. 15, issue 2)	Examining management control in the strategic development of business model and managerial innovations.	Interpretative study utilizing qualitative content analysis. Data consists of 20 EMBA final theses in the field of strategy and 20 interviews.	With managerial and business model innovation, appropriate management control can be established by aligning the innovation being developed with the strategic story of the organization, leveraging co-creational projects and experimentation with close customer contact.	Summer Seminar of Finnish Economists 2016, Jyväskylä, Finland
Aaltola, P., Manninen, A. 2021 "Drawing the premises for personalized learning: Illustrations of management and accounting" (*Journal of Accounting Education*, Vol. 54, Issue 1)	Experimenting on the potential of drawing as a novel pedagogical approach in management education.	20 drawings by managers illustrating their work from an accounting perspective. Data were examined in content as well in the form of visualization with an interpretative analysis approach.	The study was the first in the sphere of accounting education and research to take drawing seriously as a learning method. The results show how drawing can be used as a tool by facilitating the visualization of the managerial contexts participants work within.	Interdisciplinary Perspectives on Accounting Conference 2018, Edinburgh, UK BAFA Accounting Education SIG Conference 2019, Ghent, Belgium Annual Meeting of the Academy of Management 2019, Boston, USA

4.1 Narratives on the accounting worldview of practicing managers

Aim of the study

The aim of the first article was to investigate how managers view accounting in their work. The study's domain was approached with an open mind, but with a specific pre-defined research strategy. The topic was approached from three perspectives, which allowed richer data to be collected and operated as building blocks for further insight. First, the learning experiences of managers were addressed in order to reflect how the relationship with and understanding of accounting has evolved during managers' careers. Second, managers' views on the organizational development were explored, aiming to describe managerial needs for accounting development in its applied organizational context. Third, personal competence building was approached to frame the essential competence development themes and areas for practicing managers.

Theoretical foundations

There is growing recognition of the importance of understanding the living practice of management accounting (Jönsson 1998, Hall 2010, Chua 2007, Malmi & Granlund 2009, Malmi 2005, Hopwood 2007) and of making an impact on it (Birnberg 2009, ter Bogt & van Helden 2012, Scapens 2006, van der Meer ‐ Kooistra Jeltje & Ed 2012). However, so far there has been little interest in management accounting research to investigate how accounting is implicated in managerial work (Gerdin, Messner & Mouritsen 2014). This study responded to this call by focusing not just on the use of accounting information, but on comprehensively exploring the relationship between accounting and managerial work.

The understanding of managerial work offered a motivational starting point for the study. Research has found that managers constantly confront information uncertainty (Kotter 1982) and their work is characterized by brevity, variety and discontinuity (Mintzberg 1973, Mintzberg 1975). More recent studies have reinforced these findings, emphasizing that managerial work is far from knowing before doing anything (Holmberg & Tyrstrup 2010). Managerial work should be seen as a continuous flow of actions that involving interaction and is based on information from variety of sources, including accounting systems and reports. Organizations and their management and control have become less top-down and are more characterized by shared values and day-to-day interactions (Teittinen & Auvinen 2014). This shift towards post-bureaucratic organizational contexts offers an inspiring starting point for studying management accounting.

Methodology and empirical data

This qualitative interpretative research seeks an understanding of the everyday practice of accounting. Utilizing a qualitative research approach developed within grounded theory (Glaser, Barney, G & Strauss 1967, Glaser, B. G. 2009, Bryant & Charmaz 2007, von Alberti ‐ Alhtaybat Larissa & Al ‐ Htaybat Khaldoon 2010, Evans 2013, Bruce 2008), this research offered an inductively developed four-dimensional framework that illustrates the accounting in the context of managerial work. The qualitative data consisted of essays texts written by managers. The respondents were Executive MBA students from the University of Jyväskylä. The 48 respondents represented various industries and had on average 14 years of managerial experience. The average age of the respondents was 42 years and of the 48 respondents, 34 were male. The fact that the writing process gave managers time to reflect upon their experiences and come up with conclusions produced rather refined data to be analyzed in order to form the results.

Results

The results of the article were constructed by systematically and inductively forming the key themes of each of the three perspectives (learning experiences, organizational development, competence building) that the respondents were writing about. After that, further theorization was conducted by elaborating the themes into a collection of categories. The literature was used to challenge and support interpretations that had been formed and to locate the findings within the existing research. Figure 1 presents a framework of managers' concepts of accounting, summarizing the results. The first category, knowledge base, brings forward the competencies and information resources managers considered to be essential. The second category, strategic mindset, emphasizes a comprehensive understanding and continuous learning regarding the organization's business model and an individual's managerial area of responsibility in that setting. By providing information, insight and understanding, these two form foundations for financial management for a practicing manager. The third category, accounting-embedded organization, highlights the all-pervading nature of financial issues in organizations. The fourth category, managerial actions, describes the concrete actions of managers from an accounting standpoint. Together, accounting embedded-organization and managerial actions describe management with an accounting mindset, with its organizational managerial practices and concrete actions.

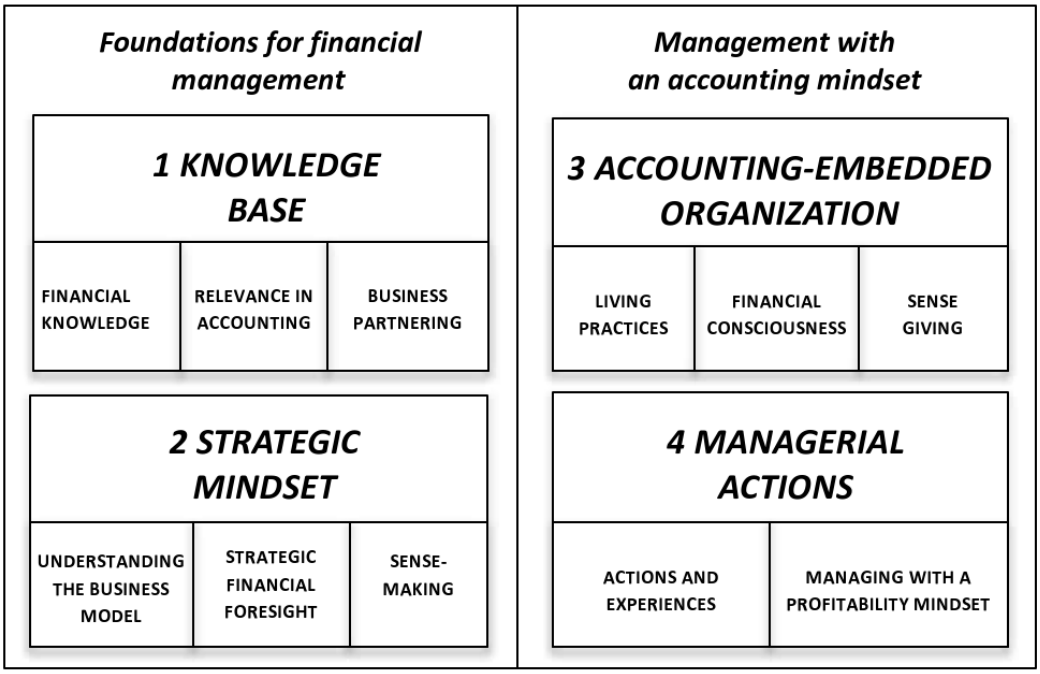

FIGURE 1 Managers' concepts of accounting

Conclusions

In addition to responding to a general call to provide more practice-focused accounting research (Jönsson 1998, Hall 2010, Chua 2007, Malmi 2005, Malmi & Granlund 2009, Hopwood 2007), this research outlined what the practice of accounting in managerial work actually is. It was discovered that from a manager's perspective, accounting should not only emphasize retrospective control and change descriptions, but concentrate on the future-oriented building of successful organizations. The study also provided methodological contribution to accounting research by presenting a unique case in which managers' written reflective texts are used as data. The results suggest that the financial mindset in managerial work is not merely a collection of different ways for counting euros but instead a more multidimensional way of looking at strategy, organizations, people's actions and interaction in general.

4.2 Strategic thinking and accounting: Benefits and pitfalls from a managerial perspective

Aim of the study

This study aimed to extend our understanding of the role of accounting in managers' thinking as they generate ideas for business model development, strategize in order to create success for the future and quantify their strategic plans and intentions in terms of desired financial outcomes. The research question of the second sub-study was to investigate the ways experienced managers find accounting useful in strategic thinking and what disadvantages they have experienced.

Theoretical foundations

Strategic thinking has been explored in managerial work, with a focus on its explicit business impacts. Yet the connection of strategic thinking to accounting seems to be a rather unexplored area in research. Contingency-based research has concentrated on examining management control, with an emphasis on structures rather than actors, and has been criticized for concentrating too much on formal company practices and organization-level analysis (Davila, A., Foster & Oyon 2009, Tervala ym. 2017, Chenhall & Moers 2015). This study responded to calls to study subjective mechanisms and informal systems of control (Reimer, Van Doorn & Heyden 2016, Tervala ym. 2017, Martyn, Sweeney & Curtis 2016) and aimed to extend the understanding of contemporary research by providing explanations for why accounting is often seen to be problematic and, therefore, absent (Choudhury 1988, Taipaleenmäki 2014) in strategic contexts.

Three elements, which build on Bonn's (2005) definition, were used to define the characteristics of strategic thinking in this study. A holistic understanding of the organizational context was emphasized to highlight a systems perspective, a mental model of "how the world works" (Liedtka 1998). Second, a visionary and proactive perspective was included, suggesting that strategic thinking is fundamentally about developing new ideas (Stacey 1992). Acknowledging that managers do "think about strategies" in the strategy execution phase as well, strategic thinking was approached in this study from the perspective of strategy development, as a future-oriented managerial activity, as seeking innovation and visions regarding the directions that the organization should pursue (Mintzberg 1994). Third, an innovative and creative, business-focused approach to adding customer value (Bonn 2001, Bonn 2005) was included.

Kaikkonen (1994) has presented four areas where accounting could play a role in strategic thinking. First, accounting contributes to the construction of the strategist's own world-picture when an individual applies concepts of accounting in their interpretations of the enterprise. Second, accounting has a role in strategic thinking through possible means of analysis and analytical practice. Third, accounting may fulfill the need for conviction in alleviating the fundamental sense of uncertainty regarding the future. Fourth, accounting functions as a means of communication, because strategic issues are typically objects of debate and change that are concerned with shared meanings. These four areas can be used to draw together various perspectives presented in the existing literature on strategic thinking and accounting.

In addition to the benefits of using accounting in strategic thinking, there have been critical views presented about the use of accounting and calculative practices in future-oriented strategic planning (Cooper, S., Crowther & Carter 2001, Whittle & Mueller 2010) and the low involvement of management accounting in strategic decision-making (Brandau & Hoffjan 2010). In addition to drawing attention to the disadvantages of using accounting, previous research has also found accounting to be totally or partially absent in strategic contexts (Nixon & Burns 2012, Langfield - Smith 2008, Brandau & Hoffjan 2010, Taipaleenmäki

2014). Taken together, existing studies provide evidence that accounting is seen to have both positive and negative effects in strategic contexts, suggesting that accounting in a strategic thinking context is not a neutral thing, but could been seen as a duality, one with the potential to provide both advantages and disadvantages to the process.

Methodology and empirical data

The main data of this research consisted of 23 interviews. The respondents were selected from among all EMBA graduates (108) from between 2011 and 2014. The interview themes were structured based on the literature review and categorized by reflecting on the key themes of this study. The results were formed through qualitative content analysis (Hsieh & Shannon 2005). The analysis of the interview data was split into two phases that formed the main categories of its content analysis, with the code development and application being performed consecutively and separately. The first main category was managers' use of accounting in strategic thinking. The coding categories were created in a concept-driven way from existing theory, with Kaikkonen's (1994) theoretical framework being adopted as a basis for organizing the data. The second main category in the content analysis of the interviews was established as the reasons for not using accounting in the context of strategic thinking.

Results

The results were elaborated into a framework (Figure 2) outlining the advantages and disadvantages of using accounting in strategic contexts. The results show that accounting is found to be useful, but it simultaneously has disadvantages in a variety of strategic thinking contexts. Organizational accounting and management control practices were found to set frames for an individual's strategic thinking, discouraging managers from quantifying their strategic intentions and using accounting in their strategic endeavors.

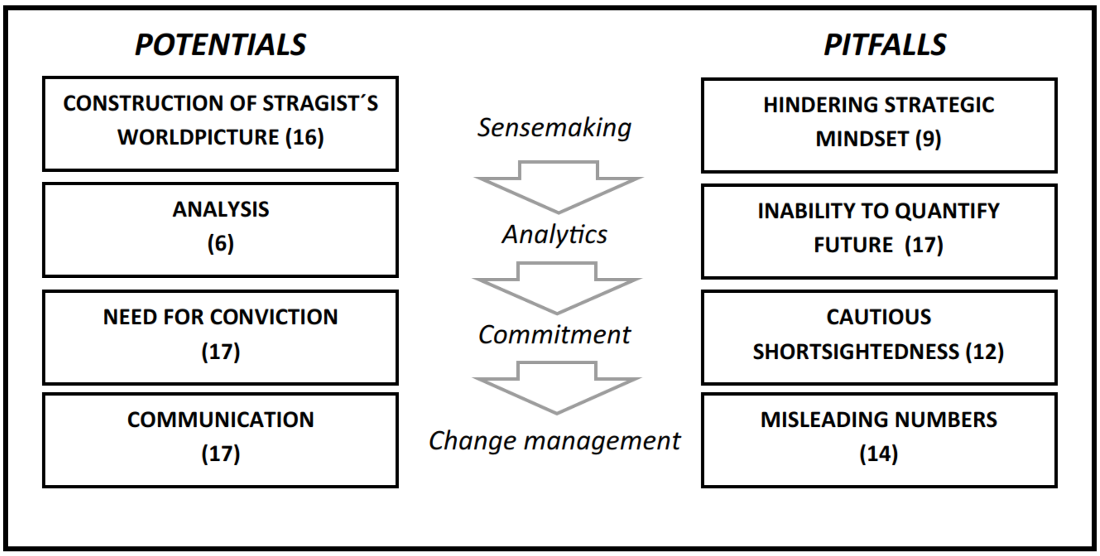

FIGURE 2. Potentials and pitfalls of accounting in strategic thinking

Firstly, the results of this study emphasize the *sensemaking* perspective, both in constructing the strategist's mindset, but also in hindering one's strategic thinking. Secondly, though managers found accounting useful in assisting analytical thinking, they also often found its usefulness to be heavily limited and even admitted to sometimes abandoning it when outlining strategic initiatives. Thirdly, accounting has a role in *commitment*, when managers devote themselves to the chosen strategic choices. This study suggests that managers do utilize accounting to test their assumptions and to satisfy their need for conviction. Nevertheless, it was noted that using accounting for gaining commitment can also lead to cautious short-sightedness. Fourthly, accounting is also a vehicle for *change management*. Sometimes the use of accounting in this respect was related to official corporate policies and practices where strategic initiatives must be formalized and their financials made explicit. The interaction around strategic ideas was also emphasized, which resonated with the findings of previous research proposing that accounting systems should be used as communication platforms facilitating interaction and discussion regarding strategic decisions (Heidmann, Schäffer & Strahringer 2008, Simons 1995, Jansen. 2015, Chapman 1998, Chenhall 2003). Whereas accounting can be considered an appropriate vehicle for communicating strategic changes, it was described almost as often as being very limited and sometimes misused in that sense.

Conclusions

The results build an understanding of accounting's role in strategic thinking, extending it from the components of making a decision into the initial framing of the strategic setting and setting the choices made into motion. A framework presenting the dual nature of accounting suggests that the benefits and pitfalls of accounting for strategic thinking constitute a paradoxical duality, which cannot be fully solved, but must be addressed by practicing managers. The theoretical contribution of this study includes the observed dual role of accounting in managers' strategic thinking and its implications for management control in organizations. These findings help us to understand contradictory yet interrelated paradoxical elements (Smith & Lewis 2011) of accounting and managers' need to address these competing demands simultaneously.

This study contributes to the current literature in three major respects. First, by providing the first comprehensive description of the forms accounting can take in these enacted, localized strategic thinking contexts. Second, the findings from this study highlight a perspective that often goes unnoticed: that of individual managers. The results suggest that, from the perspective of an individual manager, strategic thinking is much more than straightforward analytical decision-making and the role of accounting is wide-ranging. Third, it provides a theoretical contribution, in our understanding, of the dual nature of accounting in strategic contexts. This study suggests that the dual nature of accounting in strategic contexts is wider than the components of making a decision (analytics and commitment), extending to the initial framing of the strategic setting in the first place (sensemaking) and putting the choices made into action (change management). Future research could expand the understanding of accounting and strategic thinking by further developing and applying this study's findings with more details. Further work is needed to fully understand the situated nature of accounting and to assess more specifically those contexts in which managers value its usefulness and those in which they are wary of its disadvantages. It also invites managers and accounting professionals to make connections between the outlined elements of accounting in strategic thinking and their own experience.

4.3 Investing in strategic development: Management control of business model and managerial innovations

Aim of the study

This article aimed to explore management control in the strategic development of business model and managerial innovations. The issue is approached from the perspective of managerial work, aiming to outline what managers consider essential elements of management control in these often iterative and learning-intensive developmental activities. The research question of this study is as follows: What do experienced managers consider essential elements of management control in the strategic development of non-technological innovations?

Theoretical foundations

Despite the importance of management control systems in organizations' innovation activities (Davila, Foster & Oyon 2009, Simons 1995, Simons ym. 2000, Chenhall & Moers 2015) and how they generate dynamic tension (Bedford 2015, Henri 2006, Curtis & Sweeney 2017), the interplay of management accounting and innovation has been identified as being insufficiently understood (Chenhall & Moers 2015, Moll 2015, Nixon 1998, Bisbe & Otley 2004, Davila, Foster & Oyon 2009). The initial phase where innovative ideas are generated and argued for has received a considerable amount of attention in previous research (Heidmann, Schäffer & Strahringer 2008, Lechner & Floyd 2007, Birkinshaw, Julian 1997, Dutton ym. 2001, Whittle & Mueller 2010). However, there is still a lack of knowledge about innovation as managed and controlled processes related to company practices (Fried 2017, Pesämaa 2017). This research addresses a perspective that often goes unnoticed: management control in the strategic development of business model and managerial innovations.

Prior research on innovations and management control has mainly concentrated on new product development (Duhamel, Reboud & Santi 2014, Taipaleenmäki 2014, Jørgensen & Messner 2010, Davila 2000, Nixon 1998). There remains both a conceptual and empirical deficit in the study of management and management control of other types of innovations. This research takes strategic development processes as a level of analysis (Davila, A., Foster & Oyon 2009, Chenhall & Moers 2015) and responds to requests to study subjective mechanisms and informal systems of control (Jansen, Van Den Bosch & Volberda 2006, Reimer, Van Doorn & Heyden 2016, Tervala ym. 2017, Martyn, Sweeney & Curtis 2016) and to further our knowledge of innovation processes (Fried 2017, Pesämaa 2017) beyond technological ones (Damanpour & Aravind 2012). This study adopts Damanpour and Aravind's (2012) definition of managerial innovation, which combines managerial, organizational and administrative aspects. They define managerial innovation as new approaches to knowledge for performing the work of management and new processes that produce changes in an organization's strategy, structure, administrative procedures and systems. In this research, the term *business model innovation* is defined in terms of non-technological innovation that alters the way an organization creates and captures value (Chesbrough 2007, Teece 2010, Markides 2006, Zott & Amit 2010, Zott, Amit & Massa 2011).

Methodology and empirical data

The study is based on the views of 20 managers engaged in strategic development and its control in various organizations. The data consist of the respondents' experiences and written project cases (EMBA final theses) involving non-technological innovations. Qualitative content analysis is used to identify three key concepts of management control of business model and managerial innovations. The main data were collected by interviewing managers with extensive experience in designing and carrying out strategic development in their work. The essential themes of the management control of non-technological innovation were created in a data-driven way. The coding frame was created using a procedure of subsumption (Schreier 2012) by adding data-driven subcategories and subsuming those new subcategories into already existing subcategories when they failed to add anything new.

Results

The examination of the interview data revealed an interesting finding regarding the non-technological innovation projects carried out in the EMBA theses. Half of the respondents considered their undertaking as unambiguously successful, reaching the goals that were set for them. The other half reported that the projects did not go as originally planned and failed to meet the set objectives. This shows the inevitable element of surprise in non-technological innovation work. Interestingly, the failed projects were still considered valuable by the respondents and they saw the projects to have been valuable in some way for the organization. This is to be explained by the nature of non-technological innovations. The failure of the projects did not make the projects worthless; instead, they were failures only to the extent that the original goals were not achieved, which offered an inspiring starting point for exploring this issue more thoroughly, exceeding the scope of these specific projects. The results of the interview data outlined three key themes – telling a strategic story, engaging in co-creative projects and validating experimentation – through which dynamic and adaptive management control of non-technological innovations could be constructed.

A strategic story was described as a motivational frame, a positive and inspirational force, aligned with the strategic narrative and mission of the whole organization. Inspirational belief allowed innovation, but within clearly defined limits. The two other themes, co-creative projects and validating experimentation, focused on strategic uncertainties, changes in significant information and learning during the development work. They described management control fostering face-to-face interaction, discussing and debating the underlying assumptions, and the current situation of the development work. Validating experimentation emphasized interactive control through investing time and attention, reviewing newly produced information, and stimulating searching and learning. In validating experimentation, customer collaboration and responsiveness to change are crucial. Co-creative projects highlighted the need for continuous interaction and discussions that aim to direct the development work. They also emphasized responding to changes rather than following predefined plans.

Conclusions

The results illuminate the dynamic and interactive nature of the ongoing strategic development of non-technological innovations. The results are conceptualized by using, and therefore contributing to, Simons' (1995) levels of control framework and Mouritsen and Kreiner's (2016) promissory economy concepts of accounting and control. The management control of non-technological innovations is found to involve various ways of learning, interaction and control of projects in the making. The development of managerial and business model innovations are typically less structurally managed and less often governed by formal management control systems than technological innovations are. The finding that non-technological innovations cannot be easily evaluated emphasizes the importance of management control during their development. This research provides a unique contribution by conceptualizing managers' understanding of the essential elements though which the management control of creative development work of non-technological innovations could be outlined. The development of managerial and business model innovation was found to possess favorable conditions where interactive and experimental approaches are beneficial. The findings of this study lead us to consider approaches in the management control of non-technological innovation development that go beyond simply comparing outcomes in different phases against originally set goals.

4.4 Drawing the premises for personalized learning: Illustrations of management and accounting

Aim of the study

This article reports on a teaching innovation experiment adopting a personalized learning approach. The use of participant-generated drawings aims to highlight participants' experiences, beliefs, and understandings (and becoming more aware of them) and relating them to the learning process on a personal level. To date, the visual mode of meaning construction has remained largely unexplored in management studies (Meyer ym. 2013). This study introduced drawing to a new sphere: an executive learners' accounting course and explores drawing as an alternative to words and numbers in developing the understanding of organizations and their management.

Theoretical foundations

This study explores the potential of drawing as a novel pedagogical approach in management education, a field accused of being overly focused on traditional teaching models and approaches (Asik-Dizdar 2015, Bennis & O'Toole 2005, Khurana 2007, Mintzberg 2004, Pfeffer & Fong 2002, David, David & David 2011, Rubin & Dierdorff 2009, Miley & Read 2019, Minocha, Reynolds & Hristov 2017). Despite some recent innovations (Krom & Williams 2011, Tucker 2017), the accounting elements of MBA programs have also been criticized for a lack of innovativeness (Böer 2000, Hermanson, Hermanson & Alsup 1998). Several suggestions have been made to develop management education for experienced learners in a direction that recognizes the experience of the participants as a strength (Mintzberg 2004, Minocha, Reynolds & Hristov 2017, De Déa Roglio & Light 2009, Ruane 2016, Currie & Knights 2003, Tushman ym. 2007, Garvin 2007). Moreover, little attention has been paid to the role of drawing in the process of learning. Even though drawing has been suggested as a method for qualitative research (Zweifela & Van Wezemaela 2012, Copeland & Agosto 2012, Stiles 2004), it remains a rarely used approach in facilitating respondents to express their understandings of an issue or phenomenon.

Methodology and empirical data

This study is exploratory and interpretative in nature. By focusing on understanding the world from the perspective of those living in it, the research seeks to approach the phenomenon without strong a priori assumptions, definitions or theoretical frameworks. Moreover, as in the phenomenological research traditions, after facilitating the visualization of the managerial contexts participants work within, this research sees the respondents as co-constructors of the interpretations of the study.

The study is built on unique data. Twenty participants on an executive MBA accounting course completed a learning assignment using visualization, which involved producing a drawing to illustrate their managerial work from an accounting perspective. The drawings were aimed to show how they understood their managerial work in an accounting context. The illustrations were examined in content as well in the form of visualization with an interpretative analysis approach (Hatch 2002). Using a collective construal approach, the findings were also discussed with the participants.

Results

The analysis of the drawings allowed them to be assigned to three categories. The first category was "illustrating the operations," where the main emphasis was on the visualization of business operations and organizational activities. The second category was "financial processes." It featured more conventional concepts of accounting, describing aspects such as income, costs, cash flow, and the way that accounting issues are handled. The third category of drawings approached the assignment by illustrating a drawing that was classified as a "visual metaphor". These acted like figures of speech that helped to explain the idea that the respondents had related to accounting and their work.

Conclusions

This research responded to many calls for further study on the use of visuals in accounting and management research (Quattrone 2009, Busco & Quattrone 2015, Garreau, Mouricou & Grimand 2015, Meyer ym. 2013, Jane & Samantha 2009). This research contributed by showing how drawing can be used to advance a personalized learning approach, taking the experiences and unique setting of each adult learner into consideration as suggested by various authors (Minocha, Reynolds & Hristov 2017, De Déa Roglio & Light 2009, Ruane 2016, Tushman ym. 2007). The results offered an illuminating example of developing accounting education by highlighting the individual managerial contexts of executive students that form the bases for learning. Moreover, visualizations making the managerial context of the participants more explicit also offered a motivational starting point for learning. The drawing experiment helped managerial students to become more aware of their previous understandings and offered the students more opportunity for agency around their learning, therefore fostering experiential learning on a personal level (Kolb 1984). This article also outlines the limitations of the experiment, and includes several suggestions for further development of the drawing method in executive education.

5 DISCUSSION

This section outlines this research project's contributions to theory, research methodology and the practice of management. The aim of elaborating on the conclusions of the project is to make this dissertation final report more than merely a compilation of the original publications. First, the theoretical and methodological contributions made by this study are addressed. After that, given the deliberate purpose of this dissertation to focus on the managers' perspective on accounting, the implications of this research for the practice of management are comprehensively discussed. Several considerations for managerial work regarding the strategic roles of accounting are outlined. Finally, this discussion section of addresses the limitations of the study and suggests several avenues for further academic research.

5.1 Theoretical contributions

This research project was designed in order to *explore managers' understandings of the strategic role of accounting in managerial work*. Although the topic of accounting in managerial work intersects with various discussions in the existing literature, the stated main research objective can be used to determine the areas of main theoretical contributions of this study. It brings forward two wider locales of interests: managers' understandings of accounting, and the strategic role of accounting, which direct the theoretical contributions of this study. Figure 3 outlines the formation of these wider themes in relation to the sub-studies of this research project. The following sections present the theoretical contributions of this study, linking them with their ensuing theoretical discussions.

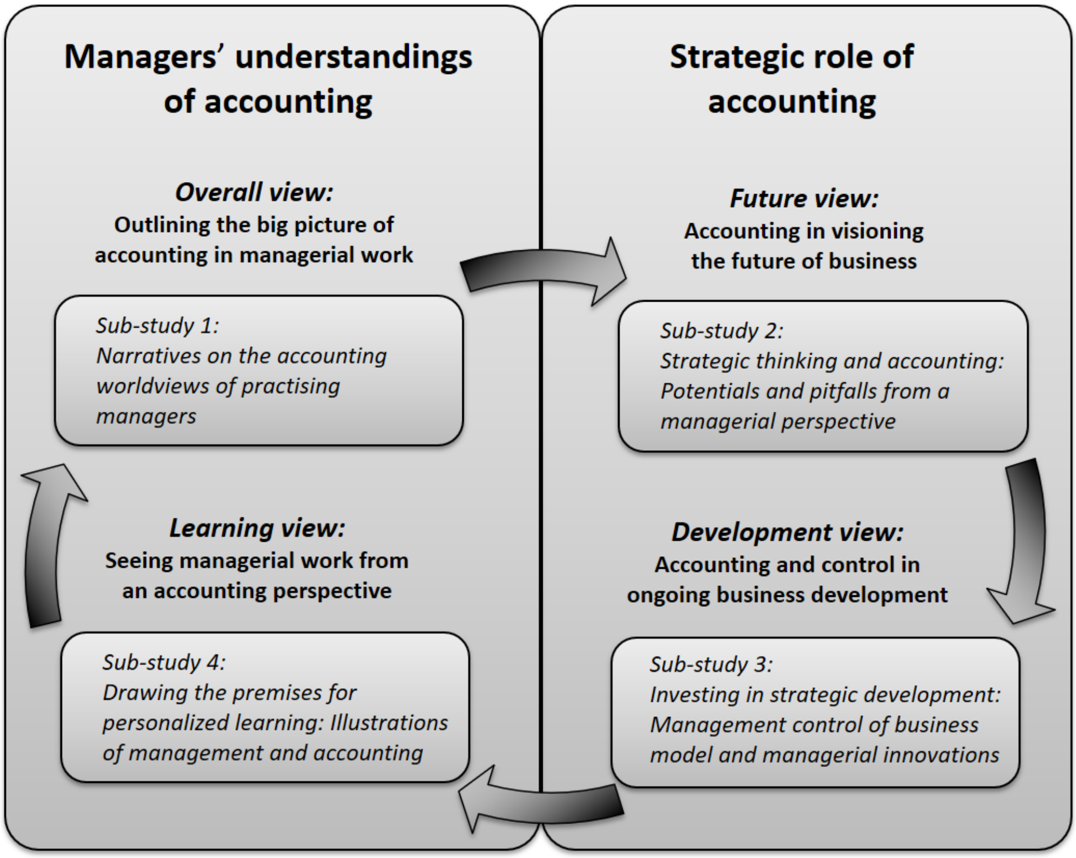

FIGURE 3 Formation of the theoretical contributions of this research

5.1.1 Elaborating on managers' understandings of accounting

This research explored accounting as part of managerial work from a perspective that often goes unnoticed: that of individual managers. With this approach, this research responded to the need to provide more practice-focused accounting research (Chua 2007, Malmi & Granlund 2009, Hopwood 2007, Malmi 2005) and especially to calls for accounting research on the practitioners' perspective (Chua 2007, Jönsson 1998, Gerdin, Messner & Mouritsen 2014, Hall 2010, Lövstål & Jontoft 2017). Not just the use of accounting information was examined, but also the relationship between accounting and managerial work was comprehensively explored. Therefore, this research contributes to the literature in several ways by forming an understanding of how managers, not accounting professionals, view accounting in their work.

In addition to responding to calls for accounting research on the managers' perspective, this research contributes to the existing literature by outlining what the manifestation and use of accounting in managerial work actually is. The results suggest that, from the perspective of an individual manager, the role of accounting is wide-ranging. The use of accounting in managerial work is much more than straightforward analytical decision-making. A financial mindset in managerial work is not merely a collection of different ways for counting euros – or even of specific accounting techniques and systems at all – but instead a more multidimensional way of looking at strategy, organizations, people's actions and interaction in general. This research showed, for example, that strategic decisions in managerial work do not exist, as such, ready to be analytically solved. Even though managers are surrounded by accounting systems and information in organizations, it is often the manager who outlines and constructs the strategic issue by interpreting the relevant information related to that issue and thereby builds a worldview. In this setting, accounting can develop the manager's ability to outline how they can enhance an organization's financial success and determine where the biggest potential for influence may lie. This view is connected to the notion in Tillman and Goddard (2008), who stated that accounting is not a reality in itself, but part of a broader organizational reality. This research has highlighted the concepts of a manager's accounting worldview, and how this is intertwined with one's continuing sensemaking in managerial work. This study suggests that since the managers' understanding of accounting in their work is strongly grounded on their experience and professional contexts, the advancement of such understanding should also be. The starting point for such learning should be outlining one's professional setting from an accounting perspective and, more specifically, describing one's position as an actor in the accounting realm in their organization. This forms adequate premises for building the financial mindset and furthering the manager's understanding of accounting in educational contexts.

Several researchers have suggested that accounting education research and its findings should be utilized to develop teaching (Ravenscroft ym. 2008, Rebele & St. Pierre 2015), especially since the accounting elements of MBA programs have been criticized for a lack of innovativeness (Böer 2000, Hermanson, Hermanson & Alsup 1998). This study adds to the growing body of research that indicates that executive learning should be more closely grounded in the managerial work of the participants (Ruth 2017, Garvin 2007, Fox 1997, Contu & Willmott 2003, Tushman ym. 2007). However, there has been little research on how the learner's experience could be taken as a starting point for further lessons and utilized in formulating the learning journey. The field of formal management education has traditionally neglected this approach, and is often been accused of being overly focused on traditional teaching models and approaches (Asik-Dizdar 2015, Bennis & O'Toole 2005, Khurana 2007, Mintzberg 2004, Pfeffer & Fong 2002, David, David & David 2011, Rubin & Dierdorff 2009, Miley & Read 2019, Minocha, Reynolds & Hristov 2017). This research addressed some specific challenges associated with this field and explored how the previous experiences, beliefs, and understandings of an executive student could be elicited and related to the learning process on a personal level.

Managers enter a learning setting with their experience of the topic (e.g. accounting issues in managerial work). This is connected to the idea of experiential learning (Kolb 1984), which defines learning as "the process whereby knowledge is created through the transformation of experience." In this approach, all learning can be considered re-learning. The results of this study highlight the importance of continually deepening the understanding of accounting in the context of managerial work. Effective managerial learning should be about manager becoming more aware of their previous understandings, examining beliefs, and integrating more refined perspectives into their managerial thinking. This research addressed the concern over how traditional teaching approaches fail to engage students (Miley & Read 2019) by suggesting that with experienced managers, prioritizing the individual learning experience should be the starting point to advance their understanding of accounting issues in their managerial work. Therefore, this research contributes to the literature by proposing that management education for experienced learners move towards recognizing the experience of the participants as a strength (Mintzberg 2004, Garvin 2007, Minocha, Reynolds & Hristov 2017, De Déa Roglio & Light 2009, Ruane 2016, Currie & Knights 2003, Tushman ym. 2007). The findings of this research can be used to reinforce the sensemaking process as part of accounting education for practicing managers, leading to making one's own perceptions more explicit and evaluating one's often complex professional setting.

Although students' existing understandings of a topic are essential, the results of this research resonate with the views that the learning process and its aims should be to some extent outlined in advance. For example, it has been suggested that the organizing logic of the content could be considered beforehand, such as in the form of a conceptual framework (Samuel 2018). Accounting is a discipline that includes technical precision, which poses a challenge from the perspective of individual learning. On the other hand, conceptualization and framing the existing understanding too prevalently can lead to overcommitment to one's pre-existing thinking. Information that supports and is consistent with pre-existing understanding is easily afforded greater priority (Tucker 2017). This study strengthens the idea that this perseverance of belief should be carefully considered in accounting education. Due to the essential role of prior understanding brought forward in this research, accounting education for experienced managers needs to be built on a balanced approach. Furthermore, executive learning should be based on something more than students constructing their own knowledge and choosing their own learning goals.

In addition to its implications for the field of accounting education and learning, the findings of this research extend to the wider role of accounting in organizations and their management. Regardless of the found significance and multidimensionality of accounting in managerial work, it should be noted that accounting is only one of many activities in an organization, and it is often considered only as a support function. In accordance with the present results, previous research has found strategic management accounting practices to often be absent in organizations (Nixon & Burns 2012, Langfield - Smith 2008). Moreover, accounting professionals' role was not particularly pronounced in this research. Despite the absence of accounting professionals and SMA frameworks, this research highlights accounting's role in managerial work from the perspective of practicing managers themselves. Although sometimes unobtrusive, accounting was found to play an integral role in managerial work. The results of this study suggest that a financial mindset in managerial work is characterized by a need to see one's managerial area of responsibility and its development through accounting logic. These findings contribute to the existing observations that managers use accounting information to develop their understanding of their general work environment as well as to support them in explicit decision-making situations (Hall 2010). Framing the so-called big picture is essential. Constituting this understanding should be seen as an ongoing process of constructing and interpreting the dynamics of building a successful business organization, as well as of one's personal role in that setting. This was especially pronounced when accounting and control were explored in strategic contexts.

5.1.2 Theorizing on the strategic role of accounting

This research also makes theoretical contributions to accounting's role in strategic contexts. This area was approached from multiple perspectives, constituting a holistic understanding of the issue. First, the research assumed a wide view on what is "strategic" by using the concept of strategic thinking. The aim was to understand the role of accounting when managers generate ideas for business development and strategize in order to create success for the future. The existing literature on strategic thinking is extensive (Zabriskie, Huellmantel & Huellmantel 1991, Heracleous 1998, Liedtka 1998, Bonn 2001, Bonn 2005, Tavakoli & Lawton 2005, Nuntamanop, Kauranen & Igel 2013) but it does not outline any specific ways that accounting might play a role in strategic thinking of managers. Previous literature has merely suggested that that strategic thinking is hypothesis driven (Liedtka 1998) and should emphasize a rational approach (Bonn 2005) and analytical thinking ability (Nuntamanop, Kauranen & Igel 2013). This research contributes by providing the first comprehensive description of the forms accounting can take in managers' strategic thinking.

In addition to outlining the usefulness of accounting in managers' strategic thinking, this present work also found accounting to have another side in strategic contexts. This research contributes to the literature problematizing the role of accounting in future-oriented strategic contexts (Choudhury 1988, Taipaleenmäki 2014, Cooper, Crowther & Carter 2001, Whittle & Mueller 2010, Sajasalo ym. 2016) by outlining reasons for why accounting is sometimes seen to be problematic and, therefore, absent in strategic managerial settings. In addition to the limitations of making accurate calculations about the future, organizational factors were found to be important in outlining the use of accounting in managers' strategic thinking. The manager as a strategist is not completely an autonomous thinker, as emphasized by Kaikkonen (1994). Managers are also influenced by forms of organizational strategic alignment (Akroyd, Biswas & Chuang 2016, Slagmulder 1997) and goal congruence element of management control (Malmi & Brown 2008). This research demonstrates that organizational factors were influential in the interpretation of strategic issues. Organizational accounting practices were found to set frames for the individual's strategic thinking. Financial goals and constraints in strategic actions can limit the individual's freedom for interpretation and action. On the other hand, managers also used accounting in organizational contexts for their own advantage. For example, when promoting suggested strategic initiatives, managers saw accounting as a benefit in communication regardless of whether they themselves had found accounting to be valuable during the previous phases of strategic development. Consistent with the literature, this research found that accounting information was used to reduce uncertainty (e.g. Frishammar 2003) and in strategic contexts, plausibility was favored over accuracy (Weick 1995).

Another area where this study provides a theoretical contribution is in our understanding of the dual nature of accounting. Existing research has provided interesting findings on the various positive and negative effects of accounting (Denis, Langley & Rouleau 2006, Nutt 1998, Frishammar 2003, Kutschera & Ryan 2009, Cooper, Crowther & Carter 2001, Whittle & Mueller 2010, Mastilak ym. 2012) and addressed the interplay of rationality and intuition in decision-making (Kahneman 2011, Langley 1995, Calabretta, Gemser & Wijnberg 2017). However, there have been few empirical investigations on accounting's dual-sided nature, particularly in strategic contexts, from the perspective of practicing managers. This study expands on the tensions and duality of accounting. The results suggest that the dual nature of accounting in strategic contexts is wider than the explicit decision-making phase, extending from the initial framing of the strategic setting in the first place into putting the choices made into action. For example, in the initial framing, the use of accounting can create understanding, clarity and commitment, but it can, at the same time, paradoxically narrow the strategic mindset and create cautious shortsightedness.

Traditionally the dualism and tensions of accounting and management control have been addressed with a contingency approach (Chapman 1997, Chenhall 2003), which basically asks what management should emphasize under what conditions. More recently, it has been suggested that management control and innovation can create tensions by presenting competing demands (Lövstål & Jontoft 2017) and that these tensions could be managed by paradoxical thinking, in which both approaches to the issue are leveraged (Calabretta, Gemser & Wijnberg 2017). This study contributes to this discussion by suggesting that in addressing accounting in strategic thinking, we should shift the focus from a contingency approach, which deals with tensions by seeking a balance that favors one competing demand at the expense of another, to seeing accounting and control as something that embraces opposing yet interrelated forces simultaneously. Resolving the tensions related to accounting and management control in strategic contexts in this way does not mean eliminating them, but addressing competing demands simultaneously. In the context of strategic thinking this means that accounting is represented as a range of benefits and pitfalls, as a paradoxical duality that cannot be fully solved but the tensions of which must be confronted. This paradoxical approach assumes that any exclusive choice among opposing forces in managerial work is temporary and the tension will resurface. Since it is challenging to change how peoples' brains are wired to think (Beshears & Gino 2015), leaders should adopt a financial mindset in which they are more aware of the context of their decisions and their thought processes. For example, whereas rational use of analysis and accounting information can be an appropriate approach to avoid the flaws of fast intuitive human thinking (Kahneman 2011, Langley 1995), this study outlines reasons why this is an insufficient approach in managerial work. In addition, slower analytical thinking comes with its own disadvantages when applied in strategic contexts.

The third area of theoretical contribution of this research relates to accounting's role in strategic development work. This present study is unique in exploring management control in the strategic development of innovations. Previous research has built up an understanding of the adoption and use of different management control systems on a company level (Bisbe & Otley 2004, Bisbe & Malagueño 2009, Ditillo 2012, Mouritsen, Hansen & Hansen 2009) and in the area of innovation and new product development (Duhamel, Reboud & Santi 2014, Taipaleenmäki 2014, Jørgensen & Messner 2010, Davila, T. 2000, Nixon 1998). This research responds to needs to study control and innovation on a more specific level than that of the organization (Davila, Foster & Oyon 2009, Tervala ym. 2017, Chenhall & Moers 2015) and adds a unique perspective by conceptualizing management control of strategic development of non-technological innovations.

Overall, this research showed that the role of accounting and management control in strategic development should not only emphasize retrospective control and change descriptions, but also concentrate on the future-oriented building of successful organizations. The findings lead us to consider approaches in the management control of non-technological innovation development that go beyond simply comparing outcomes in different phases against originally set goals. With business model and managerial innovations, an appropriate framework of management control could be built on aligning the innovation under development with the strategic story of the organization, leveraging co-creation in the projects and proceeding through experimentation with close customer contact. This corresponds with Ahrens and Chapman's (2007) view of how the focus of accounting research should be not only on resistance and control, but also on the potential of management control systems for action.

Further theoretical considerations arise when this study's findings about accounting and management control in strategic contexts are examined in the light of the existing literature. Previous literature (Davila, Foster & Oyon 2009, Chenhall & Moers 2015, Davila 2000, Revellino & Mouritsen 2015) has suggested that management control of innovations requires an adaptive system emphasizing subjective measures instead of diagnostic control. This research outlined the elements that act as an enabling system, facilitating responses to business development challenges and supporting successful innovations. The strategic development of managerial and business model innovations was found to be an imprecise and creative process where the control should be thought of as an adaptive system along the way. In this way, the results of this research also expand on the views by Mouritsen and Kreiner (2016), who have suggested that a decision is not just the end of the decision-making process, but that decisions are also promises which open new beginnings. This study enhances the work of Mouritsen and Kreiner (2016) by specifically explaining the mechanisms through which the unfolding world is addressed by managers. Decisions set things in motion. A promise is a commitment to invest and to continually adjust the development work. Furthermore, a learning perspective is included in the strategic decision-making process through continuously monitoring the original assumptions around the decision, and comparing expected outcomes with actual realized performance. The results contribute to the literature on management control of innovations where calls for research on subjective mechanisms and informal systems of control (Reimer, Van Doorn & Heyden 2016, Tervala ym. 2017, Martyn, Sweeney & Curtis 2016) have been presented. Based on the findings of this study, strategic development has no straightforward means–end relationship and this is especially emphasized in the context of developing non-technological innovations.

5.1.3 Summarizing the theoretical contributions

The findings of this dissertation's sub-studies contribute to the original research objective, which was to explore managers' understandings of the strategic role of accounting in managerial work. It was found that accounting in strategic managerial work is a multidimensional phenomenon, characterized by the dynamic interplay of a manager's financial mindset, the strategy of the organization, and accounting and management control. Each entity is influenced by the others. Figure 4 outlines the interrelations and dynamics of these key concepts.

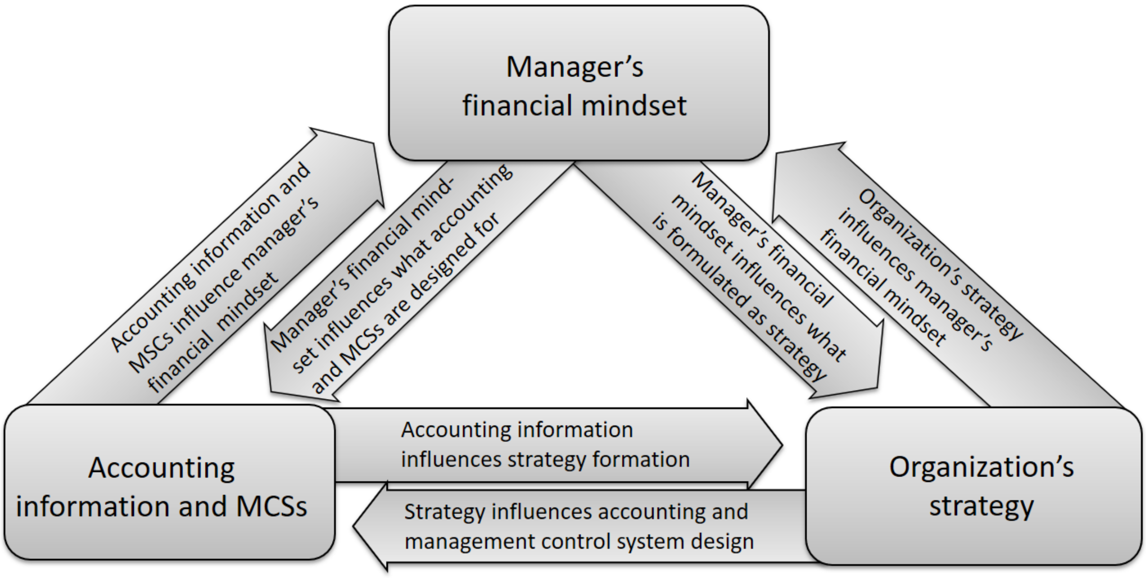

FIGURE 4 Interrelations of a manager, accounting and strategy

A manager's financial mindset, referring to a manager's ways of thinking about accounting in strategic managerial work, is interrelated and influenced by the strategy of the organization and its accounting and management control systems (MSC). Accounting and management control influences the manager, for example, producing information of what has succeeded and what has not. But then again, it is the managers who, based on their understanding, have set accounting to measure certain things. Likewise, the strategy of the organization provides a frame for the financial mindset of a manager, even though the strategy has been formulated by management. Furthermore, accounting and strategy are also concepts that can be seen in dynamic relationship with each other. Information and understanding produced through accounting has an influence on strategic choices and what is set as strategy. On the other hand, strategy influences, for example, what is set to be monitored by accounting and management control systems.

Many of the results of this research supported and expanded on the findings of previous studies. The results have furthered our understanding of, for example, the multidimensional role of accounting in managerial work, the absence of accounting in strategic contexts, the potential of management control systems for innovation, and the proper grounding of learning about accounting in the managerial work of the learner. In addition, some of the results of this research project offered more original and novel contributions to accounting theory, such as providing a comprehensive description of the forms accounting can take in managers' strategic thinking, addressing the tensions and duality of accounting in strategic contexts, and in outlining the elements of management control in the strategic development of innovations. Furthermore, some results contradicted or provided another viewpoint on previous research. For example, they suggested reasons why merely avoiding the flaws of intuitive human thinking is an insufficient approach in decision-making.

Overall, this study aimed for theoretical contributions that would be helpful in developing the use of accounting in managerial work. In this view, the argument is that management accounting research should be undertaken in order to develop such theories that would be used by someone to accomplish something (Malmi & Granlund 2009). The contributions of this research can hardly be considered as something completely new and independent theories for the international scientific community. Instead, they should be considered theoretical conceptualizations and observations that aim to address several practitioner-related challenges in using accounting in managerial work.

5.2 Methodological contributions

This research aimed for an in-depth understanding of the strategic role of accounting in managerial work. In order to achieve this goal, multiple innovative qualitative research approaches were utilized, leading to several methodological contributions in the field of management research. The research project was designed to investigate the issue through various empirical settings, engaging with a range of managers working in many organizations. This was possible though the University of Jyväskylä's executive education, which provided an opportunity for collecting the data with novel approaches. The empirical material of this research constituted of 48 reflective essays and 26 final thesis reports written by managers, 23 interviews and 20 participant-generated drawings. In total, 91 managers were involved in producing research data for this research. The production and analysis of this material led to several contributions to the methodological approaches used in qualitative management research.

First, this study provides methodological contribution by presenting a unique case in which managers' written reflective texts are used as data. To date, there has been no use of reflective personal narratives from various experienced executives in management accounting research. So far, texts in general have been used in accounting research mainly in content analysis of the narrative portions of annual reports and other forms of organizational communication (Smith & Taffler 2000, Steenkamp & Northcott 2007). Reflective texts have been used into some extent, but as learning diaries documenting a learning process (Eskola 2011) or as research diaries to assist in gaining an understanding in case studies (Lewis, Sligo & Massey 2005). Reflective texts proved to be useful in this study in expanding our understanding of how managers view accounting in their work. Writing as a method offered many benefits. It compelled the respondents to think in a more concentrated way than in an interview. Although it may be easy to speak rather open-endedly and at length about a certain topic, conceptualizing one's understanding in writing demands a more considered thought process. The fact that the respondents had time to reflect upon their experiences, express themselves and come up with conclusions also produced rather refined material. Compared to an interview, the writing process allowed time to reflect on one's views and provided the respondents a possibility of structuring the output across several periods of time. Using self-produced texts could thus be further encouraged in management studies. However, this methodological approach should only be considered in cases where there is an appropriate possibility to produce that kind of material and it fits the overall research setting.

Another unique data set, in the form of written texts, was utilized in this research project. Executive MBA final thesis reports written by managers focusing on strategy were analyzed in order to examine managers' use of accounting. Previous research has typically addressed the use of accounting in managerial work contexts through longitudinal case studies. Instead of a specific case setting, this study took a different approach by qualitatively exploring the experiences, opinions and reflections of experienced managers coming from a variety of organizations. The use of EMBA final thesis reports as data provided unique and extensive material to be analyzed. From a methodological perspective, it is noteworthy that the data was originally produced without any influence from this research project. This provided a unique insight into managers' strategic thinking, which was then further addressed through interviewing the same managers.

In addition to analyzing texts written by managers as empirical material, this research project offers an original methodological contribution by experimenting with visual methods. Managers' strategic understanding of accounting was explored using participant-generated drawings, which were used to make the managerial context of the participants explicit. To date, the visual mode of meaning construction has remained largely unexplored in management studies (Meyer ym. 2013). This research introduced drawing to a new sphere: an accounting course for executive learners. Visual research methods are established practices in qualitative research, but are used in reporting data more often than collecting it from participants. This research explored whether the visualization of managers' inner worldviews through drawing could provide an actual purpose for doing so, instead of merely supporting other data collection. In accounting education, visualization has been proposed for use in the form of concept maps as a way to make instruction or curriculum transparent to students (Greenberg & Wilner 2015). However, this research shows that visualization can also play a reverse role. Visualizations produced by managers can be used to make their initial understandings of a topic more transparent. Through visualization, it is possible to create a feedback loop that can be used to respond to one's ideas and understandings. This study was the first in the sphere of accounting education and research to take drawing seriously as a learning method. Overall, this study shows that a drawing method can be used to tailor the instructional environment both for and by the learner, and in turn lead to stronger ownership of the learning.

5.3 Managerial implications

This study enhances our understanding of accounting from the perspective of managerial work. In other words, it helps managers to look at their work from an accounting perspective. This has several important implications for the practice of management. First, the findings highlight the dynamic multidimensionality though which accounting represents itself in managerial work. This understanding helps managers to leverage the full potential of accounting and to become aware of its limitations in various professional managerial contexts. Secondly, this study offers managerial implications on the use of accounting in strategic contexts, contributing to an understanding of how to use accounting in strategic decision-making. Third, it suggests ways in which managers can control ongoing strategic development projects, tackling some of the issues related to innovation activities in organizations more generally. Fourth, this study proposes implications for the continuous construction of a manager's financial mindset. The findings aim to encourage managers to develop their understanding of accounting as well as their financial view of their organization's reality. The following section describes the four areas of managerial implications of this study.

5.3.1 Outlining the full potential of accounting for the practice of management

The starting point for realizing the full potential of accounting in managerial work is outlining the nature of accounting in that context. This research addressed managers' understandings of accounting from various perspectives, constituting an understanding of accounting's four essential dimensions in managerial work. This view of accounting can be used by managers to reflect upon their own relationship with accounting and, on the other hand, the capabilities and managerial practices of their organization. First, the fundamental *knowledge base* in accounting is essential for tapping into the potential of accounting. This means evaluating both the manager's personal competency in accounting as well as the organization's information resources and practices. From an individual manager's perspective, accounting knowledge competencies are fundamental and an essential starting point in the further use of accounting in managerial work. Organizations, in turn, should ensure that the appropriate production of relevant accounting information is in place and managers have business-focused accounting professionals as their partners. The second dimension of accounting in managerial work is related to the *strategic mindset*. This research suggests that managers should strive for a comprehensive understanding and continuous learning regarding their organizations' business models and one's personal role in those settings. This is related to the continuous need for practicing managers to outline their area of managerial responsibility and its development in financial terms. Together, the knowledge base and strategic mindset form the foundations for financial management in organizations.

The other two dimensions of accounting in managerial work that managers should be aware of are related to organizational managerial practices and the concrete actions that are taken. The a*ccounting-embedded organization* is the third dimension of accounting in managerial work, highlighting the omnipresent nature of accounting. From a management perspective, the production, existence and understanding of accounting information are just starting points, a foundation. In addition, managers should strive to build accounting-embedded organizations where accounting is incorporated into managerial practices in the most productive way possible. At best, accounting should operate as a learning device, building a profitability-related strategic mindset within the organization, a widely shared understanding of the organization's success and performance. It is obvious that the contrary, when accounting practices do not support organizational activities, is an unproductive situation. The fourth dimension of accounting in managerial work is related to *managerial actions*, which, along with organizational practices, concretize the managerial actions from a financial point of view. Managers should consider their decisions and actions as "accounting in action," which means that all managerial actions are considered from an accounting standpoint. Figure 4 presents these four dimensions of accounting in managerial work.

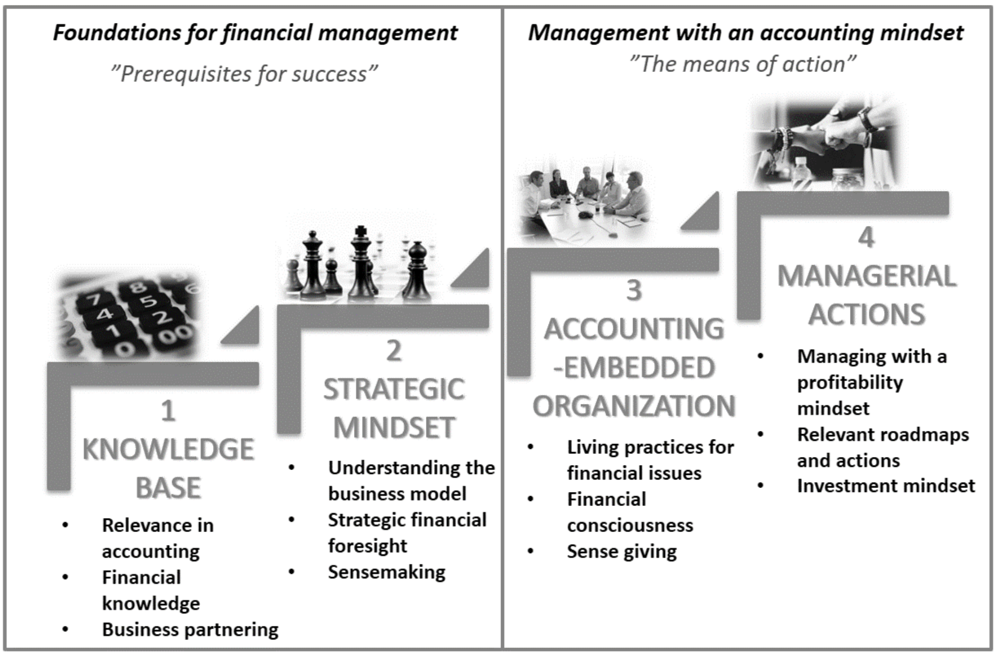

FIGURE 4 Dimensions of accounting in managerial work

When examining managerial work from the perspective of these four dimensions more closely, several observations with practical relevance to managers arise. First, the four dimensions can be used to examine managerial work on two distinct levels. Each element has implications for a manager's own role as well as on the organizational activities. The knowledge base reflects managers' personal accounting competencies, as well as an organization's financial management practices. The strategic mindset can be approached either as an individual manager's mindset and understanding, or through evaluating the organization's strategizing activities. The dimension of the accounting-embedded organization assumes the organizational accounting systems and managerial practices as a starting point. However, this dimension also contains an individual perspective. Managers can consider how capable they are of conveying financial information and inviting others to think about the issues in these settings. Inspiring and convincing financial communication and facilitating accounting-related sensemaking is a different set of competencies than merely understanding financial issues and various calculations. The fourth dimension, managerial actions, also holds an individual as well as an organizational aspect. Managerial evaluations can be made on an individual level considering one's own personal managerial actions from an accounting standpoint. Then another layer of analysis is to evaluate whether financially relevant actions occur in one's organization as a whole. In all, these four elements constitute a framework that managers can use to evaluate the current and potential use of accounting in managerial work, from both their personal and their organization's standpoint.

In addition to working as a preliminary ideation platform, the framework can be used to specifically assess each of the four dimensions from both an individual and organizational perspective. Each dimension can be assigned a numerical grade, depending on how well the situation is perceived. Evaluation like this can be done in a group, for example in a management team. The results can be shared and the ensuing discussion used to open various perspectives on the use of accounting in the organization. Despite the initiatives for business partnership, accounting often showed itself as an isolated support function for a practicing manager. It can be hard for a manager to outline suggestions on how to develop accounting practices in the organization. The four-dimensional framework developed in this research can be used to advance a shared understanding and present the full potential of accounting in managerial work in organizations.

From a management point of view, becoming aware of the potential of accounting is an essential, but as such insufficient effort. In addition to assessing one's situation and defining the areas for most development potential, also a concrete roadmap for desired actions is needed. The results of this study suggest that, for managers and organizations, tapping into the full potential of accounting is a developmental path with multiple steps. The dimensions of accounting in managerial work can indeed be seen as phase-staggered sequential steps, as visualized in Figure 4. The previous phase needs to be achieved before leveraging the potential of the next. For example, building a strategic mindset without the relevant knowledge base in accounting would be difficult. Embedding accounting in organizational practices would be challenging without the previous two dimensions constituting the foundations needed for financial management. Likewise, moving into taking managerial actions without the previous phases would be inadequate. Managers can consider these four dimensions of accounting as building blocks for tapping into the potential of financial management in organizations. A considerable amount of benefits might be missed if certain elements are not on a sufficient level. In addition to missing the potential, this research suggests that there are also some specific pitfalls in using accounting in the context of organizational management.

Managers should be aware that despite their potential, emphasizing accounting and control in the wrong way can considerably hinder organizational performance. One of the most significant findings to emerge from this study was how the advantages and disadvantages of using accounting presented themselves in a significantly different way. The advantages of using accounting are typically outlined beforehand and their potential benefits were anticipated in organizations. It should be noted that the framework presenting the dimensions of accounting in managerial work does not explicitly highlight any of the adverse side effects of accounting practices in organizational contexts. Managers should be aware that the pitfalls of accounting were found to presents themselves differently than the advantages do. For example, performance measurement is expected to direct organizational activities towards reaching strategic objectives, while making analytical calculations on proposed strategic initiatives is expected to help decision makers to evaluate their feasibility and business potential. The disadvantages of accounting, in turn, were found to present themselves latently and even surprisingly.

The results of this study suggest that managers should carefully consider the variety of negative implications that accounting and management control practices might have in their organizations. Using accounting can lead to various disadvantages, like cautious shortsightedness in business development, which was found to emerge imperceptibly over the course of time. Existing research has outlined a variety of disadvantages for accounting, but the findings of this study show that they appear in a different way than the anticipated benefits do. For example, whereas management control and accounting systems can be intentionally designed to constrain as well as to enable strategic actions, it is more often the benefits of using accounting that are expected to have an explicit influence on an organization's operations. No one deliberately designs accounting and management control systems to hinder performance, just the contrary. But then again, managers in organizations should pay attention to how control systems and accounting practices might lead to the emergence of these various disadvantages.

In the accounting literature, educating accounting professionals is often emphasized and the production of numbers in accounting processes receives the primary focus. This research highlighted another perspective, that of practicing managers. There is significant potential for managers to develop further the understanding of and use of accounting in their work, for example for building a strategic mindset, embedding accounting in organizations and evaluating their actions through an accounting lens. It should be acknowledged that the knowledge base was only one of four dimensions of accounting in managerial work. More than concentrating on the functional and practical use of accounting tools, also called the "textbook view of accounting" (Vaivio 2008), the results of this study emphasized the practicing managers' side of the issue, providing an actionable framework for addressing accounting in managerial work.

In all, the results of this research shed some light on a manager-centric approach to accounting. For example, a manager's aim is on understanding management accounting techniques in one's own organizational context, not as general methods. How one understands accounting as a manager makes a difference. People tend to "value what they own," meaning that managers who are, for example, committed to a particular cost management system have been found to be overconfident and resistant to change regarding the system (Jermias 2006). Personal professional experiences in organizational contexts are crucial in determining one's understanding in managerial frameworks and models, and they shape people's professional approaches throughout their career. Leaders in organizations can analyze their organization's practices and managerial approaches against the fuller understanding of accounting in managerial work developed in this study.

5.3.2 The role of accounting in making strategic decisions

The results of this research highlighted several issues relevant for managers involved in strategizing activities. When looking at it from a manager's perspective, the whole context of strategic decision-making showed itself to be surprisingly wide-ranging. The results of this study can help managers to outline the role of accounting in strategic decision-making more holistically. The question is not only about making explicit decisions, but also about extending from the initial framing of the strategic setting into putting the choices made into action. Strategic decisions do not often exist, as such, to be analytically solved. Instead, accounting is involved in various ways even before the explicit decision-making phase, in constructing the setting and worldview of the strategic thinker. In strategic thinking and decision-making, being aware of your own perceptions is essential. Accounting also plays a role in enforcing commitment to the decision and implementing the ensuing actions. It is essential for a manager to become more aware of the holistic context of strategic decision-making from an accounting perspective.

In addition to realizing the wide-ranging nature and context of strategic decision-making as such, this research contains an important message for managers regarding the nature of accounting in such settings. Accounting was found to present itself as being both beneficial and unproductive in strategic contexts. Whereas experienced managers might already be aware of this finding, this research offers an approach to address this issue. Managers should be aware of both the potentials and disadvantages of accounting in all four phases (sensemaking, analytics, commitment, change management) outlined in this study. Accounting can assist strategic decision-making by providing various forms of analysis, but it is has also been found to be very limited in doing that. Likewise, managers should be aware that whereas accounting has a role when managers commit themselves to the choices, testing all assumptions via accounting could lead to cautious short-sightedness. This dual nature of accounting was present also in managerial settings where strategic issues were communicated and promoted in organizations. Realizing the dual nature of accounting offers a number of implications for managerial work.

Approaching accounting in strategic contexts as something that holds both benefits and pitfalls offers a new perspective for management. Instead of seeing these contradictory, yet interrelated elements, of accounting as a dilemma of competing forces, they can be accepted as a paradoxical duality. For example, it is inevitable that in organizations there is simultaneously a need for strategic alignment and control, but also a desire to innovate and explore. Sometimes these opposing forces are latent and they could be made more explicit through applying paradoxical thinking. An organization's top management should strive for creating powerful settings for creative strategic thinking and development. The current dynamic and ever-changing business environment poses a challenge for management to facilitate continuous pursuit of opportunities for new value creation. The role of accounting should be considered carefully in this context. For example, the unintended consequences of accounting and management control leading to cautious short-sightedness might be especially harmful by hindering continuous learning and strategic initiatives in an organization. However, managers should realize that accounting does play a valuable role in strategic decision-making. Considering things in terms of money is essential. What this study suggests to managers is to become more aware of the whole range of benefits and pitfalls of accounting in strategic contexts. The results of this study can be used to inform managers about the role of accounting in this setting. This study suggests that the role of accounting was most evident and straightforward in strategic decision-making settings related to manufacturing and product portfolios with significant volume and complex cost structures. Instead, in areas with less precise premises for analytical calculations accounting was emphasized less or appeared even completely absent. This finding is essential since managing these kinds of exploratory settings that are more difficult to structure are becoming more and more important in the management agenda.

Decisions regarding new strategic initiatives sometimes demand a large amount of information to be evaluated. The challenge of such settings is to distill a lot of complexity into one chosen path forward. The findings of this study suggest that also in that setting managers would benefit from structuring the decision-making process, or at least becoming aware of its various dimensions. When decisions are not straightforward and calculative, but instead complex and judgmental, the role of accounting and control becomes two-sided. Whereas accounting practices and management control can direct decision-making into undesired directions (the pitfalls of accounting), human evaluation and judgment is also known to be susceptible to errors. Managers in this setting face a two-fold challenge. They can face "paralysis by analysis," where they get carried away with analyzing the situation from so many angles that they become unable to come up with any solution. Alternatively, they face the risk of "extinct by instinct," where they make fatal decisions based on incomplete assessment and poor data. The findings of this study suggest that these challenges are particularly pronounced in the context of ongoing strategic development work.

5.3.3 Managing strategic business development

In addition to providing managerial implications on the use of accounting in strategic thinking and decision-making, this research also extended to the phase after the initial decisions. Adding this temporal dimension was possible through the data from managers with extensive backgrounds in strategic development in various organizations. Examining the results of ongoing strategic development from the perspectives of decision-making and management control produced a number of essential managerial implications.

The underlying basic idea of financial models in evaluating the developmental initiatives is to compare the use of resources to potential future returns. This can be done in various ways, for example, by discounting estimated future cash flows, analyzing the internal rate of return of the initiative or estimating the net present value of the investment. With some business development projects, managers might be able to estimate the probabilities based on the experience on previous similar projects, but the more uncertain the setting is, the less helpful are traditional financial models in guiding the strategic development. Decisions are more based on estimates and judgments instead of clear-cut calculations. In addition to the calculations being inaccurate by nature, this also makes the projects subject to the cognitive and behavioral biases of human thinking. Decision-making regarding strategic development is challenging, but so is their management and control after the decisions. In the end, companies profit only from implemented and successful business development initiatives, not from plans and prospective innovations. Therefore, in addition to choosing the right initiatives, managing the ongoing development work is crucial.

This study clarified, from a managerial perspective, the viewpoint of Mouritsen and Kreiner (2016), who suggested looking at decisions as promises, something that set things in motion and open new beginnings. In developing managerial and business model innovations, decisions that leaders make are not the end of the process, but are commitments to invest and continually adjust the development work. This requires managers to use accounting and management control especially after the initial decisions during the actual development process of the innovation. This research provided a unique contribution by outlining the essential elements though which the management control of creative development work of non-technological innovations could be constituted. An appropriate framework of management control for developing business model and managerial innovations can be built by aligning the innovation under development with the strategic story of the organization, leveraging co-creation in the projects and proceeding through experimentation with close customer contact. This conceptualization offers several managerial implications related to strategic development activities in organizations.

Since financial analysis in innovation work is difficult, development projects are often argued for due to their strategic connection. The connection to company's strategy can operate as a guideline directing the development work and making innovation work appear legitimate. Especially in the early stages of the innovation process, different initiatives' connections to the strategy was found to be even more important than numerical analysis of their potential outcomes. Working towards pre-defined strategic goals of the company is essential. Also during later phases of the development, a project with strong strategic emphasis is more likely to be continued despite of potentially encountered adversities. At best, strategy can form a positive and inspirational force, aligning developmental activities with the strategic narrative and mission of the whole organization. The strategic story of the initiative can form the grounds for moving the project forward. But after that, other forms of control were also found to be needed.

Strategic development projects should be managed in a co-creative way for two reasons. First, managers should appreciate it as an essential response to the demands of such a highly complex and challenging task. Innovation work often requires competencies exceeding the capabilities of an individual. Furthermore, it is even difficult to identify the best mix of capabilities and tasks in advance. The answer is that various people should be involved in an iterative way. The success resides in the interaction between all of the people affected and all those taking part. From a managerial perspective, the success of the innovation work is increasingly a result of skillful participation management: who is included and who should be, who is not, and who is actively excluded. For example, in developing a novel business model innovation, no single individual is so multitalented as to be competent regarding all the needed perspectives. A range of viewpoints is needed, from marketing, and finance to ICT and so on. Fundamentally, business models are built around solving a customer's problem. When managers widen the circle of participation around the development work, they also widen the solution space. The results of this study suggest that it is the manager's role to manage this co-creation, to actively and sincerely seek input from various perspectives and make sure that all necessary elements are included in the development work.

Another managerial implication of this research regarding co-creative management of development work is related to change management. Continuous co-creation and interaction with various people can increase commitment. This is especially emphasized when the focus of the development work is on re-designing organizational practices and operational models. In creating such managerial innovations, the challenge is not only in tackling a business challenge, but also in changing people's mindsets and organizational behavior. Co-creative projects highlight the need for continuous interaction and discussions that aim to direct the development work, but also foster face-to-face interaction, discussing and debating about the underlying assumptions. Non-technological innovation in an organizational context is not primarily a resource allocation process; it is also a process of co-creative learning and change.

Regardless of the strategic alignment and co-creative and participatory management of development projects, innovation work consumes resources. By definition, innovation is about introducing something new and it is therefore uncertain what kind of results the creative process will produce. Directing the development work with validating experimentation was found to be essential for increasing the quality of the innovation work, as well as for reducing the risks associated with it. Especially in business model innovation, the role of the customer collaboration is instrumental. It is almost impossible to figure out all the details of a novel business model without stimulating searching and learning in a responsive way. Organizations can be too inward focused, instead of reviewing newly produced information and experimenting in close contact with customers. Investing in success through non-technological innovations should be carried out via smaller experiments, gradually investing time and attention and re-directing the development work based on the views of end-users.

In all, the managerial implications outlined here regarding management control of the ongoing development work provides guidelines for managers for addressing non-technological innovation work in organizations. For example, development projects could be evaluated through the following questions:

1. Does this initiative fit into our understanding of the business environment? Does it support the strategic aims of the company? (strategic story)
2. How can learning be amplified and co-creative contributions from various perspectives utilized in the project (co-creative projects)?
3. How can the project be re-directed and evaluated along the way to design smaller experiments? (validating experimentation)

The changing business environment and growing emphasis on non-tangible resources make it increasingly harder to define development investments and initiatives beforehand and then monitor their progress along a preset path. Defining optimal selection criteria beforehand in choosing among various innovation initiatives is impossible. If managers set very strict criteria before moving forward, they reduce the risk of committing to bad projects, but on the other hand, increase the risk of missing some opportunities. In turn, if managers set loose criteria for starting a project, they reduce the risk of killing good initiatives, but also end up wasting resources on unproductive projects. Since perfect decision-making on innovation project proposals is impossible, organizational practices during the development work become central. Control concepts described in this research can be used by managers to design management control of non-technological innovations as a planned and managed process that still recognizes the iterative and collaborative nature of the development work.

These perspectives are grounded on this study's main findings, and they are largely in line with contemporary managerial thinking on fostering agile development and innovation. Ensuring the strategic relevance of development projects and managing them in a co-creative and experimental way with a customer focus seems like an appropriate approach. However, a further interesting finding was that these guidelines were not commonly practiced in combination in the respondents' organizations. From a managerial perspective, this is fascinating, because, at first glance, none of the practices appears undesirable. On the contrary, everyone probably aims to act strategically, collaboratively and with a customer focus. Despite their justification, this theorization should be critically addressed. The concept of paradoxicality was also addressed in managerial implications regarding the use of accounting in strategic thinking (see section 5.3.2). When the management of ongoing development work is considered, it becomes evident that the paradoxical perspective extends to this context as well.

Why then are those things that seem so acceptable not more extensively a common reality in companies? These principles do not appear to be ones the implementation of which would provoke resistance in organizations. So why are management control principles in strategic development, especially those that seem useful and attractive, so rare? The answer resides in the dual-nature of innovative organizations. There are reasons why even desirable principles in management are not always easy to implement. This is in line with Pisano (2019), who stated that when managers look at successful organizations and admire their characteristics, they tend to focus only on the easy-to-like behavior and fail to observe the other side, the hard side of innovative cultures. The managerial implications of this research can also be examined in this light. Managing the ongoing development work requires managers to consider the necessary conditions needed for the presented principles to work as well.

First, managers can address using the strategic story as a management control critically. Strategic alignment of the development work is something that everyone is eager to embrace. However, for leaders in an organization, this is not only a challenge of formulating the strategic story of the innovation initiative. It is also a challenge to define a company's strategy in a way that it forms a motivational frame for innovation work. It is not self-evident that an organization has such a strategy that inspires and unequivocally directs the development work. And even if such a strategy exists and is clearly communicated, contributing to that with actionable initiatives is difficult.

A co-creative and collaborative mode of working is no panacea for directing the development work either. Managers should consider the needed elements in creating a truly productive collaborative setting. An essential element of collaboration highlighted in this research was to ensure that the innovation under development would benefit from all relevant contributions. However, merely wishing this to happen is insufficient. Participation in innovation activities needs to be managed. Also, collaboration and co-creative development does not mean excluding individual accountability for decisions that are made. A certain level of individual accountability is needed to drive collaboration. For example, when a project manager has strong personal accountability, it incentivizes the search for all the relevant perspectives and contributions in order to help the project succeed. In innovation work, consensus is often impossible to achieve. In an uncertain setting with limited information and various options on how to proceed, different people have different views. There are good reasons why managers are sometimes skeptical in implementing collaborative organizational practices that are too open ended, with everyone involved in formulating decisions and equally sharing the accountability for results. All help and contributions are needed in innovation work and collaboration is therefore essential for performance in development work, but it can be balanced with certain structures and an appropriate level of individual accountability.

Moreover, the third aspect in managing the ongoing development work, validating experimentation, benefits from certain conditions in order to work properly. With their specific structures and guidelines, every project proposal and initiative in an organization could be counted as an experiment. That could lead into wasting resources on development projects that are too open ended. In business development and innovation work, magnificent successes are rare. You are bound to fail often regardless of the sophistication of your project management practices. Therefore, it should be part of the design of the experiments that you learn as much as possible. Every experiment, in addition to being carefully planned, should be appropriately analyzed as well. Experimentation should be balanced with disciplined evaluation of the lessons learned. Also, criteria are needed to evaluate whether to continue, modify or end a development project. The more you kill bad projects, the more resources you have for launching new experiments. Well-defined criteria, established beforehand, can increase the perceived fairness of the evaluation or the experiment. The goal for managers is to make the innovation activities in an organization a collaborative problem-solving process, instead of a competitive contest advocating alternative projects.

This study has highlighted experiments in business model innovation development and the role of the customer in that development. Again, this sounds like a rather obvious and desirable approach to take. However, there might be more than it appears at first in here also, explaining why this approach was not a common practice across the participants' organizations. Managers have good reasons for being skeptical regarding the experimental approach to innovation. For starters, experiments do not always succeed; on the contrary, their aim is to provide lessons. In order to learn from your experiments you need tolerance for failure. This might be difficult to put into practice because any experiment and learning failure with a customer is not acceptable. In order to leverage experiments, you need highly competent people. The more competent the people are, the less risky is the experimentation approach in practice. From a managerial perspective, tolerance for failure often means intolerance for incompetence. Project teams should operate with high performance standards, be brutally transparent and operate with frank communication. In practice, this sets the operating standards high. Not every organization has a talent pool or the innovation practices and corporate culture of a Silicon Valley tech giant. Managers might have good reasons for being cautious in executing strategic business development in an "experimental way."

In all, management research offers a wide range of frameworks and approaches for practicing managers to use. All of the guidelines and suggestions here should be assessed critically by practicing managers to determine the implementation potential in their own organizational and business context.

5.3.4 Continuous construction of the manager's financial mindset

Probably the most fundamental managerial implication of this study is how it encourages managers to examine their own financial mindset. Managers could benefit from becoming more aware of their understanding and relationship with accounting. The starting point for evaluating one's financial mindset is to reflect upon how the relationship with accounting has evolved. The understanding and reinterpretation of one's experiences is pivotal. In this study, many managers highlighted their professional experiences, often focusing on a period of time or an incident during which they had come to understand the wider context of accounting and management in their work. A holistic understanding of accounting is something that every manager should pursue. Realizing the overall operating frame of what they do in terms of money and value creation is essential. In addition to becoming more aware of those experiences which impact their financial mindset, managers should carefully examine their current organizational context with an accounting lens. This is a contextualized effort to see the essential parts and activities of an organization through a financial mindset, an effort that should be made personally by each manager. The relevant financial aspects vary across different managerial roles.

One of the most essential perspectives for managers that this research aims to convey is the strategic role of accounting in managerial work. Even experienced managers were often found to view accounting as something that is most useful in examining the financial consequences of things that have already happened. This might be the current state of affairs in organizational accounting practices, but there is potential in realizing the role of accounting and management control in forward-looking strategic activities in managerial work. The financial mindset of a manager is not only a matter of making decisions, but also of how those decisions should be made. In the context of strategic business development, managers rarely have enough information to make the best choices with sufficient precision. The crux of the matter in strategic development is that managers always seek to put scarce resources to the best use. It became evident in this study that, from a manager's perspective, strategic decisions are not always one-off occurrences. Instead, they often involve recurrent evaluation of the continuing development work along the chosen path. In principle, development of non-technological innovations requires the same kinds of resource allocation decisions as other investments do as well as the development of more tangible assets. However, the development of non-technological innovations have characteristics that make evaluating and controlling them in practice anything but a straightforward managerial exercise. Regardless of the vagueness and uncertainty related to the strategic development, managers still need to manage the process in some way. Decisions have to be made based on limited information and often even limited understanding of potential outcomes from different choices. Furthering your understanding and even questioning your assumptions on decision-making and management is essential in managerial work.

For everyone working in a managerial position, the constant pursuit to ensure the financial viability and success of the organization is essential. This involves becoming more aware of the nature and potential of accounting in managerial work. Accounting in managerial work mirrors its environment and human behavior at a specific time and in specific contexts. The financial mindset of a manager should be addressed as something that a manager can develop. A manager's financial mindset is more than a learned tendency to evaluate things in a certain way, more than merely a fixed attitude or appreciation of financial issues.

It has to do with the thoughts and beliefs that shape how managers make sense of the world and see their work though an accounting lens.

A leadership role should be regarded as a constant state of developing yourself and your organization. Hopefully this research encourages managers to reflect on their experiences, examine their managerial role and continuously develop accounting practices and control mechanisms that help in building success for the future.

5.4 Evaluating the quality of the dissertation and proposing paths for further research

This study was an extensive journey examining managers' understandings of accounting. The aim was to explore managers' understandings of the strategic role of accounting in managerial work. Examining such a wide topic is bound to lead to some limitations regarding the scope of the research.

An approach of studying the issue in multiple stages through various data sets was adopted. The data consisted of 48 essays, 26 EMBA final thesis reports, 23 interviews and 20 drawings. In total, 91 managers contributed to this research. This empirical setting poses some challenges related to evaluating the quality of the dissertation. Since the respondents come from different organizations, it is obvious that this research distances itself from building an in-depth understanding of any specific organizational setting. Instead, the focus of this research was on managers' understandings of the issue. Further research is needed to investigate the essence of accounting in managerial work across more specific organizational settings, with a focus on organizational practices and dynamics. This research only partially explores the dynamics and complexity of managerial work as an interaction of local actors. This research is also limited in how it builds its understanding of the topics based on the experiences and views of managers with rather diverse job descriptions. The results suggest that accounting's relationship with managerial work depends also on the specific managerial area of responsibility. Further research could focus more on exploring the nature of accounting in specific managerial job positions.

A further limitation is related to the overall research problem and setting. What are managers capable of saying about such a large and complex issue? Although interviewing, for example, accounting professionals would have provided a more specialized view on the use of accounting in organizations, it was the practicing managers' perspective that this research was after rather than that of accounting professionals. The methodological approaches used in the research are bound to limit what kind of material can be produced and how it will be interpreted. For example, interview data can be biased toward responses from more articulate informants. In this research, manager's writings were also analyzed and drawings were produced. Writing and drawing aptitude varies from person to person, limiting the output of the research. This naturally holds a risk of overgeneralizing the outputs of the more talented writers/drawers.

It is also appropriate to be aware that the qualitative nature of this research and the methods used set certain limitations. Qualitative content analysis as a method helps to describe material only in those respects specified by the researcher. The method does not allow describing the full meaning of the material in each and every respect. This study did not, for example, aim to cover all aspects related to strategic issues and accounting in companies. The aim was instead to investigate and study individual managers' interpretations and build an overall understanding of the issue. Whereas this use of multiple data sets and methods creates certain limitations for this research, it also enhances the validity of the research through triangulation by multiple data sets and methods. Overall, the results produced with multiple qualitative data sets involving the 91 individual respondents build a coherent understanding in describing the issue. The reliability of the research was further increased by implementing the research methods carefully, involving other researchers in analyzing the data and reporting methodological aspects transparently.

Overall, the quality of a study should be evaluated in relation to the adopted larger research strategy and the ensuing choices made on methodological approaches. The research project was initiated due to an interest in the topic of accounting in managerial work. The aim was to explore the theme from various perspectives utilizing several data sets and theoretical approaches. Therefore, the research had a lower risk of drifting into the pitfall put forward by Malmi and Granlund (2009), who state that sometimes a pre-adopted theory defines what is considered to be interesting in a research project. Theory was approached in this research with a rather pragmatic focus, using it in designing the research questions and guiding the interpretation of data. Theory was instrumental in making sense of things and proposing explanations of findings instead of testing theory-driven hypotheses. The nature of the produced theoretical contributions were in line with this approach, aiming to further understanding of the strategic role of accounting in managerial work.

Despite consciously choosing the research strategy and carefully planning the research process accordingly, evaluating the quality and credibility of interpretative qualitative research is challenging. Such research has traditionally been associated with a pronounced element of subjectivity (Burrell & Morgan 1979). However, Lukka and Modell (2010) suggest that the validity of interpretative research can be improved by convincing readers of the authenticity of research findings and simultaneously ensuring that explanations are considered plausible. This research aimed at authenticity by elucidating managers' meanings with rich descriptions of the empirical material from various data sets. Multidimensional assessment of the credibility of the developed explanations aimed for plausibility. In addition to describing accounting in managerial work, this research attempted to further understanding and identify explanations of the phenomenon. Rather extensively reported guidelines and suggestions as to how to apply, or not to apply, management accounting in managerial work, are aimed to contribute to the plausibility of the results of this qualitative research.

This study has highlighted that the understanding of accounting from the perspective of practicing managers requires further research. The focus of this research has been on building an initial theoretical framework. Future research could expand the understanding and further develop these approaches by applying this study's findings on a more detailed level. For example, the role of accounting in different kinds of managerial roles could be further studied. For a sales director, the relevant financial aspects might be focused on revenues, as compared to an entrepreneur who has overall financial responsibility of the business. Relevant financial aspects vary across different managerial roles. The understanding and financial mindset of actors other than experienced managers could be examined. Considerably more work is also needed on personalized learning in accounting and innovative pedagogical approaches. This study only scratched the surface of that area.

This research has furthered our understanding of the strategic roles of accounting in managerial work, another area that could be further investigated. Strategic thinking and the decision-making of managers remains an area where more work is needed. The results of this study showed that despite their legitimate intentions, accounting models and calculations in this context are helpful only to a limited extent. Further research is required to more specifically assess the contexts in which managers value accounting and, in turn, those in which they are wary of it. A focus on the tensions and paradoxical nature of accounting in strategic contexts could produce interesting findings that explain the situated nature of accounting and management control.

Innovation work and strategic development activities are another area in need of further research. This study focused on the strategic development of non-technological innovations and found it to be an imprecise and creative process. Even though the nature of strategic development can be characterized as interactive and experimental, the role of accounting and management control should be examined further and more carefully. The results of this study indicate that the management models for non-technological innovation are often less well established in organizations than they are for technological innovations, which are typically run and developed by designated professionals. Management and control of these activities could be further examined. Despite their specific characteristics, non-technological innovations could also be investigated as investments, where certain expenditures are required in the present to generate revenues in the future. Acknowledging the dynamic nature of the innovation and development work, building a theory on management control and understanding innovation as a manageable organizational process is something that needs to be done.

Despite the limitations outlined in this section, this study makes a potentially important contribution towards the understanding of accounting from the perspective of one of its most important users, managers. The hope is that it inspires further exploration of the strategic roles of accounting in managerial work. Financial mindsets matter.

REFERENCES

Abraham, S. 2005. Stretching strategic thinking. Strategy & Leadership 33 (5), 5-12.

Adler, P. S. 2012. Perspective—The Sociological Ambivalence of Bureaucracy: From Weber via Gouldner to Marx. Organization Science 23 (1), 244-266.

Adler, P. S. & Borys, B. 1996. Two Types of Bureaucracy: Enabling and Coercive. Administrative Science Quarterly 41 (1), 61-89.

Adler, P. S. & Chen, C. X. 2011. Combining creativity and control: Understanding individual motivation in large-scale collaborative creativity. Accounting, Organizations and Society 36 (2), 63-85.

Ahrens, T. & Chapman, C. S. 2007. Management accounting as practice. Accounting, Organizations and Society 32 (1), 1-27.

Akroyd, C., Biswas, S. & Chuang, S. (toim.) 2016. How management control practices enable strategic alignment during the product development process. Bingley: Emerald Group Publishing Limited.

Akroyd, C. & Kober, R. 2020. Imprinting founders' blueprints on management control systems. Management Accounting Research 46, 100645.

Anthony, R. N., Govindarajan, V., Hartmann, F. G. & ...[et al.] 2014. Management control systems: European edition. McGraw-Hill Education.

Asik-Dizdar, O. 2015. To Be or Not to Be… a Profession: Management Education and Its Discontents. null 90 (8), 443-450.

Barros Rúben Silva & Ferreira Ana Maria Dias Simões, da Costa 2019. Bridging management control systems and innovation: The evolution of the research and possible research directions. Qualitative Research in Accounting & Management 16 (3), 342-372.

Beck, K., Beedle, M., Van Bennekum, A., Cockburn, A., Cunningham, W., ym. 2001. Manifesto for agile software development. Available at: http://agilemanifesto.org   Bedford, D. S. 2015. Management control systems across different modes of innovation: Implications for firm performance. Management Accounting Research 28, 12-30.

Bennis, W. G. & O'Toole, J. 2005. How business schools have lost their way. Harvard business review 83 (5), 96-104.

Beshears, J. & Gino, F. 2015. Leaders as decision architects. Harvard business review (3).

Biloshapka, V. & Osiyevskyy, O. 2018. Three value-focused strategic questions for continuously updating your business model. Strategy & Leadership 46 (3), 45-51.

Birkinshaw, J. & Moll, M. 2009. The sources of management innovation: When firms introduce new management practices. Journal of business research 62 (12), 1269-1280.

Birkinshaw, J. 1997. Entrepreneurship in multinational corporations: The characteristics of subsidiary initiatives. Strategic Management Journal 18 (3), 207-229.

Birnberg, J. G. 2009. The Case for Post‐Modern Management Accounting: Thinking Outside the Box. Journal of Management Accounting Research 21 (1), 3-18.
Bisbe, J. & Malagueño, R. 2009. The Choice of Interactive Control Systems under Different Innovation Management Modes. European Accounting Review 18 (2), 371-405.
Bisbe, J. & Otley, D. 2004. The effects of the interactive use of management control systems on product innovation. Accounting, organizations and society 29 (8), 709-737.
Böer, G. B. 2000. Management accounting education: Yesterday, today, and tomorrow. Issues in Accounting Education 15 (2), 313-334.
Bonn, I. 2005. Improving strategic thinking: a multilevel approach. Leadership & Organization Development Journal 26 (5), 336-354.
Bonn, I. 2001. Developing strategic thinking as a core competency. Management Decision 39 (1), 63-71.
Brandau, M. & Hoffjan, A., H. 2010. Exploring the involvement of management accounting in strategic decisions and control: The case of offshoring. Journal of Accounting & Organizational Change 6 (1), 72-95.
Bromwich, M. 1990. The case for strategic management accounting: The role of accounting information for strategy in competitive markets. Accounting, Organizations and Society 15 (1), 27-46.
Brouthers, K. D. & Roozen, F. A. 1999. Is it time to start thinking about strategic accounting? Long Range Planning 32 (3), 311-322.
Bruce, G. 2008. Remaining consistent with method? An analysis of grounded theory research in accounting. Qualitative Research in Accounting & Management 5 (2), 122-138.
Bryant, A. & Charmaz, K. 2007. The Sage handbook of grounded theory. Sage.
Burkert, M., Fischer, F. & Schäffer, U. 2011. Application of the Controllability Principle and Managerial Performance: The Role of Role Perceptions. Management Accounting Research 22 (3), 143-159.
Burns, J., Hopper, T. & Yazdifar, H. 2004. Management accounting education and training: putting management in and taking accounting out. Qualitative Research in Accounting & Management 1 (1), 1-29.
Burrell, G. & Morgan, G. 1979. Sociological paradigms and organisational analysis-elements of the sociology of corporate life.
Busco, C. & Quattrone, P. 2015. Exploring how the balanced scorecard engages and unfolds: Articulating the visual power of accounting inscriptions. Contemporary Accounting Research 32 (3), 1236-1262.
Calabretta, G., Gemser, G. & Wijnberg, N. M. 2017. The Interplay between Intuition and Rationality in Strategic Decision Making: A Paradox Perspective. Organization Studies 38 (3-4), 365-401.
Cambridge Dictionary 2020. Cambridge Dictionary. Meaning of mindset in English. Available at: https://dictionary.cambridge.org/dictionary/english/mindset
Camisón, C. & Villar-López, A. 2014. Organizational innovation as an enabler of technological innovation capabilities and firm performance. Journal of business research 67 (1), 2891-2902.

Chapman, C. S. 1998. Accountants in organisational networks. Accounting, Organizations and Society 23 (8), 737-766.
Chapman, C. S. 1997. Reflections on a contingent view of accounting. Accounting, Organizations and Society 22 (2), 189-205.
Chenhall, R. H. 2003. Management control systems design within its organizational context: findings from contingency-based research and directions for the future. Accounting, Organizations and Society 28 (2), 127-168.
Chenhall, R. H. & Moers, F. 2015. The role of innovation in the evolution of management accounting and its integration into management control. Accounting, Organizations and Society 47, 1-13.
Chesbrough, H. 2010. Business model innovation: opportunities and barriers. Long range planning 43 (2-3), 354-363.
Chesbrough, H. 2007. Business model innovation: it's not just about technology anymore. Strategy & Leadership 35 (6), 12-17.
Choudhury, N. 1988. The seeking of accounting where it is not: Towards a theory of non-accounting in organizational settings. Accounting, Organizations and Society 13 (6), 549-557.
Chua, W. F. 2007. Accounting, measuring, reporting and strategizing-Re-using verbs: A review essay. Accounting, Organizations and Society 32 (4-5), 487-494.
Chua, W. F. 1986. Radical developments in accounting thought. Accounting review 61 (4), 601-632.
Cohen, J. R. & Holder - Webb, L. L. 2006. Rethinking the influence of agency theory in the accounting academy. Issues in Accounting Education 21 (1), 17-30.
Collett, N. J. 2000. Innovation or renovation: effective project design for accounting and MBA students. null 9 (1), 67-92.
Contu, A. & Willmott, H. 2003. Re-Embedding Situatedness: The Importance of Power Relations in Learning Theory. Organization Science 14 (3), 283-296.
Cooper, R. G. 1990. Stage-gate systems: a new tool for managing new products. Business horizons 33 (3), 44-54.
Cooper, S., Crowther, D. & Carter, C. 2001. Challenging the predictive ability of accounting techniques in modelling organizational futures. Management Decision 39 (2), 137-146.
Cooper, T., Downer, P. & Faseruk, A. 2013. Accounting education for MBA students: Beyond the debits and credits. Journal of Contemporary Business Issues 19 (1), 37-50.
Copeland, A. J. & Agosto, D. E. 2012. Diagrams and Relational Maps: The Use of Graphic Elicitation Techniques with Interviewing for Data Collection, Analysis, and Display. International Journal of Qualitative Methods 11 (5), 513-533.
Craig, R. 2001. Surviving an executive MBA'riot'. Accounting Education 10 (3), 325-327.
Currie, G. & Knights, D. 2003. Reflecting on a Critical Pedagogy in MBA Education. Management Learning 34 (1), 27-49.

Curtis, E. & Sweeney, B. 2017. Managing different types of innovation: mutually reinforcing management control systems and the generation of dynamic tension. Accounting and Business Research 47 (3), 313-343.

Damanpour, F. & Aravind, D. 2012. Managerial innovation: Conceptions, processes and antecedents. Management and organization review 8 (2), 423-454.

Damanpour, F. & Gopalakrishnan, S. 2001. The dynamics of the adoption of product and process innovations in organizations. Journal of management studies 38 (1), 45-65.

David, F. R., David, M. E. & David, F. R. 2011. What are business schools doing for business today? Business horizons 54 (1), 51-62.

Davila, A., Foster, G. & Oyon, D. 2009. Accounting and Control, Entrepreneurship and Innovation: Venturing into New Research Opportunities. European Accounting Review 18 (2), 281-311.

Davila, T. 2000. An empirical study on the drivers of management control systems' design in new product development. Accounting, organizations and society 25 (4-5), 383-409.

De Déa Roglio, K. & Light, G. 2009. Executive MBA Programs: The Development of the Reflective Executive. AMLE 8 (2), 156-173.

Denis, J., Langley, A. & Rouleau, L. 2006. The power of numbers in strategizing. Strategic Organization 4 (4), 349-377.

Denning, S. 2018. Succeeding in an increasingly Agile world. Strategy & Leadership 46 (3), 3-9.

Denning, S. 2016. Understanding the three laws of Agile. Strategy & Leadership .

Detzen, N., Verbeeten Frank, H. M., Gamm, N. & Möller Klaus 2018. Formal controls and team adaptability in new product development projects. Management Decision 56 (7), 1541-1558.

Ditillo, A. 2012. Designing management control systems to foster knowledge transfer in knowledge-intensive firms: A network-based approach. European Accounting Review 21 (3), 425-450.

Duhamel, F., Reboud, S. & Santi, M. 2014. Capturing value from innovations: the importance of rent configurations. Management Decision 52 (1), 122-143.

Duriau, V. J., Reger, R. K. & Pfarrer, M. D. 2007. A Content Analysis of the Content Analysis Literature in Organization Studies: Research Themes, Data Sources, and Methodological Refinements. Organizational Research Methods 10 (1), 5-34.

Dutton, J. E., Ashford, S. J., O'Neill, R. M. & Lawrence, K. A. 2001. Moves that matter: Issue selling and organizational change. Academy of Management journal 44 (4), 716-736.

Eskola, A. 2011. Good learning in accounting: phenomenographic study on experiencies of Finnish higher education students. University of Jyväskylä.

Evans, G. L. 2013. A novice researcher’s first walk through the maze of grounded theory. Grounded Theory Review 12 (1).

Fox, S. 1997. Situated learning theory versus traditional cognitive learning theory: Why management education should not ignore management learning. Systems practice 10 (6), 727-747.
Franzosi, R., P 2004. Content analysis. Teoksessa Handbook of data analysis. Sage Publications, 548-565.
Fried, A. 2017. Terminological distinctions of 'control': a review of the implications for management control research in the context of innovation. Journal of Management Control 28 (1), 5-40.
Frishammar, J. 2003. Information use in strategic decision making. Management Decision 41 (4), 318-326.
Garreau, L., Mouricou, P. & Grimand, A. 2015. Drawing on the map: an exploration of strategic sensemaking/giving practices using visual representations. British Journal of Management 26 (4), 689-712.
Garvin, D. A. 2007. Teaching Executives and Teaching MBAs: Reflections on the Case Method. AMLE 6 (3), 364-374.
Gerdin, J., Messner, M. & Mouritsen, J. 2014. On the significance of accounting for managerial work. Scandinavian Journal of Management 30 (4), 389-394.
Glaser, B. G. 2009. The novice GT researcher. The Grounded Theory Review 8 (2), 1-21.
Glaser, B., G & Strauss, A., L 1967. The discovery of grounded theory: strategies for qualitative research. New York: Aldine de Gruyter.
Goretzki, L. 2013. Management accounting and the construction of the legitimate manager. Journal of Management Control 23 (4), 319-344.
Goretzki, L., Strauss, E. & Wiegmann, L. 2018. Exploring the Roles of Vernacular Accounting Systems in the Development of "Enabling" Global Accounting and Control Systems. Contemporary Accounting Research 35 (4), 1888-1916.
Greenberg, R. K. & Wilner, N. A. 2015. Using concept maps to provide an integrative framework for teaching the cost or managerial accounting course. Journal of Accounting Education 33 (1), 16-35.
Hall, M. 2010. Accounting information and managerial work. Accounting, Organizations and Society 35 (3), 301-315.
Harris, M. & Tayler, B. 2019. Don't Let Metrics Undermine Your Business. Harvard business review (5).
Hatch, J. A. 2002. Doing qualitative research in education settings. Suny Press.
Haukedal, W. & Grønhaug, K. 1994. Context-specific rationality in sense-making of strategic stimuli. Scandinavian Journal of Management 10 (4), 355-367.
Healy, M., Cleary, P. & Walsh, E. 2018. Innovativeness and accounting practices: an empirical investigation. Qualitative Research in Accounting & Management 15 (2), 231-250.
Heidmann, M., Schäffer, U. & Strahringer, S. 2008. Exploring the Role of Management Accounting Systems in Strategic Sensemaking. Information Systems Management 25 (3), 244-257.
Henri, J. 2006. Management control systems and strategy: A resource-based perspective. Accounting, Organizations and Society 31 (6), 529-558.

Heracleous, L. 1998. Strategic thinking or strategic planning? Long Range Planning 31 (3), 481-487.
Hermanson, D. R., Hermanson, H. M. & Alsup, R. G. 1998. The accounting component of executive M.B.A. programs. Issues in Accounting Education 13 (4), 801-814.
Holmberg, I. & Tyrstrup, M. 2010. Well then - What now? An everyday approach to managerial leadership. Leadership 6 (4), 353-372.
Hopwood, A. G. 2007. Whither Accounting Research? The Accounting Review 82 (5), 1365-1374.
Hsieh, H. & Shannon, S. E. 2005. Three Approaches to Qualitative Content Analysis. Qualitative Health Research 15 (9), 1277-1288.
Huikku, J., Karjalainen, J. & Seppälä, T. 2018. The dynamism of pre-decision controls in the appraisal of strategic investments. The British Accounting Review 50 (5), 516-538.
Jane, D. & Samantha, W. 2009. Imag[in]ing accounting and accountability. Accounting, Auditing & Accountability Journal 22 (6), 845-857.
Jansen, E. P. 2015. Participation, accounting and learning how to implement a new vision. Management Accounting Research 29, 45-60.
Jansen, J. J. P., Van Den Bosch, F. & Volberda, H. W. 2006. Exploratory Innovation, Exploitative Innovation, and Performance: Effects of Organizational Antecedents and Environmental Moderators. Management Science 52 (11), 1661-1674.
Järvenpää, M. 2007. Strategy and management accounting retold: towards a narrative view to
strategic management accounting. Teoksessa M. Granlund (toim.) Total Quality in Academic Accounting. Essays in honour of Kari Lukka.Turku: Publications of the Turku School of Economics and Business Administration, 81-108.
Jones, R. 2017. Enlightenment through engagement? The potential contribution of greater engagement between researchers and practitioners. null 26 (5-6), 414-430.
Jönsson, S. 1998. Relate management accounting research to managerial work! Accounting, Organizations and Society 23 (4), 411-434.
Jordan, S. & Messner, M. 2012. Enabling control and the problem of incomplete performance indicators. Accounting, Organizations and Society 37 (8), 544-564.
Jørgensen, B. & Messner, M. 2010. Accounting and strategising: A case study from new product development. Accounting, Organizations and Society 35 (2), 184-204.
Kahneman, D. 2011. Thinking, fast and slow. Macmillan.
Kaikkonen, V. E. 1994. Ihminen, strategia-ajattelu ja laskentatoimi: Hermeneuttinen tutkimus. University of Tampere.
Kakkuri-Knuuttila, M., Lukka, K. & Kuorikoski, J. 2008. Straddling between paradigms: A naturalistic philosophical case study on interpretive research in management accounting. Accounting, Organizations and Society 33 (2), 267-291.

Kasanen, E., Lukka, K. & Siitonen, A. 1993. The Constructive Approach in Management Accounting Research. Journal of Management Accounting Research 5, 243-264.
Khurana, R. 2007. From higher aims to hired hands: The social transformation of American business schools and the unfulfilled promise of management as a profession. Princeton University Press.
Kilfoyle, E., Richardson, A. J. & MacDonald, L. D. 2013. Vernacular accountings: Bridging the cognitive and the social in the analysis of employee-generated accounting systems. Accounting, Organizations and Society 38 (5), 382-396.
Kohtamäki, M., Heimonen, J., Sjödin, D. & Heikkilä, V. 2020. Strategic agility in innovation: Unpacking the interaction between entrepreneurial orientation and absorptive capacity by using practice theory. Journal of Business Research 118, 12-25.
Kolb, D. A. 1984. Experiental Learning: Experience as the source of learning and development.
Kotter, J. P. 1982. The general managers. New York: The Free Press.
Krom, C. L. & Williams, S. V. 2011. Tell me a story: Using creative writing in introductory accounting courses to enhance and assess student learning. Journal of Accounting Education 29 (4), 234-249.
Kutschera, I. & Ryan, M. H. 2009. Implications of intuition for strategic thinking: Practical recommendations for gut thinkers. SAM Advanced Management Journal 74 (3), 12.
Labro, E. & Tuomela, T. 2003. On bringing more action into management accounting research: process considerations based on two constructive case studies. European Accounting Review 12 (3), 409-442.
Langfield‐Smith, K. 2008. Strategic management accounting: how far have we come in 25 years? Accounting, Auditing & Accountability Journal 21 (2), 204-228.
Langfield-Smith, K. 1997. Management control systems and strategy: A critical review. Accounting, Organizations and Society 22 (2), 207-232.
Langley, A. 1995. Between'paralysis by analysis' and'extinction by instinct'. MIT Sloan Management Review 36 (3), 63.
Langley, A. 1989. In Search of Rationality: The Purposes Behind the Use of Formal Analysis in Organizations. Administrative Science Quarterly 34 (4), 598-631.
Lechner, C. & Floyd, S. W. 2007. Searching, processing, codifying and practicing–Key learning activities in exploratory initiatives. Long range planning 40 (1), 9-29.
Lewis, K., Sligo, F. & Massey, C. 2005. Observe, record, then beyond: Facilitating participant reflection via research diaries. Qualitative Research in Accounting & Management .
Liedtka, J. M. 1998. Strategic thinking: Can it be taught? Long Range Planning 31 (1), 120-129.
Lopez-Valeiras, E., Gonzalez-Sanchez, M. B. & Gomez-Conde, J. 2016. The effects of the interactive use of management control systems on process

and organizational innovation. Review of Managerial Science 10 (3), 487-510.
Lövstål, E. & Jontoft, A. 2017. Tensions at the intersection of management control and innovation: a literature review. Journal of Management Control 28 (1), 41-79.
Lukka, K. 2010. The roles and effects of paradigms in accounting research. Management Accounting Research 21 (2), 110-115.
Lukka, K. 2005. Approaches to case research in management accounting: The nature of empirical intervention and theory linkage. Teoksessa M. J. Jönssön Sten (toim.) Accounting in Scandinavia - The Northern Lights.375-399.
Lukka, K. & Modell, S. 2010. Validation in interpretive management accounting research. Accounting, Organizations and Society 35 (4), 462-477.
Malmi, T. 2005. Kohti käytännöllisiä teorioita liiketaloustieteissä–toiveajatteluako. Finnish Journal of Business Economics (4), 553-559.
Malmi, T. & Brown, D. A. 2008. Management control systems as a package—Opportunities, challenges and research directions. Management Accounting Research 19 (4), 287-300.
Malmi, T. & Granlund, M. 2009. In Search of Management Accounting Theory. European Accounting Review 18 (3), 597-620.
March, J. G. 1991. Exploration and exploitation in organizational learning. Organization science 2 (1), 71-87.
Markides, C. 2006. Disruptive Innovation: In Need of Better Theory*. Journal of Product Innovation Management 23 (1), 19-25.
Martyn, P., Sweeney, B. & Curtis, E. 2016. Strategy and control: 25 years of empirical use of Simons' Levers of Control framework. Journal of Accounting & Organizational Change 12 (3), 281-324.
Mastilak, C., Matuszewski, L., Miller, F. & Woods, A. 2012. Evaluating conflicting performance on driver and outcome measures: the effect of strategy maps.
Merchant, K. & Otley, D. 2007. A Review of the Literature on Control and Accountability. Teoksessa C. S. Chapman, A. G. Hopwood & M. D. Shields (toim.) Handbook of management accounting research. Elsevier, .
Merriman, B. & Guerin, S. 2006. Using Children's Drawings as Data in Child-Centred Research. null 27 (1-2), 48-57.
Meyer, R. E., Höllerer, M. A., Jancsary, D. & Van Leeuwen, T. 2013. The visual dimension in organizing, organization, and organization research: Core ideas, current developments, and promising avenues. Academy of Management Annals 7 (1), 489-555.
Mike, T., Pike Richard, H. & Saudah, S. 2007. Intellectual capital, management accounting practices and corporate performance: Perceptions of managers. Accounting, Auditing & Accountability Journal 20 (4), 522-548.
Miley, F. & Read, A. 2019. Pragmatic postmodernism and engagement through the culture of continuous creativity. null 28 (2), 172-194.
Miller, P. & Power, M. 2013. Accounting, Organizing, and Economizing: Connecting Accounting Research and Organization Theory. The Academy of Management Annals 7 (1), 557-605.

Minocha, S., Reynolds, M. & Hristov, D. 2017. Developing imaginators not managers – How to flip the business school model. The International Journal of Management Education 15 (3), 481-489.

Mintzberg, H. 2004. Managers, not MBAs: A hard look at the soft practice of managing and management development. Berrett-Koehler Publishers.

Mintzberg, H. 1994. The rise and fall of strategic planning. New Jersey: Prentice Hall.

Mintzberg, H. 1975. The manager's job: Folklore and fact. Harvard Business Review 54 (4), 49-61.

Mintzberg, H. 1973. The Nature of Managerial Work. New York: Harper & Row.

Moll, J. 2015. Editorial: Special issue on innovation and product development. Management Accounting Research 28, 2-11.

Moon, B. 2013. Antecedents and outcomes of strategic thinking. Journal of Business Research 66 (10), 1698-1708.

Mouritsen, J., Hansen, A. & Hansen, C. Ø 2009. Short and long translations: Management accounting calculations and innovation management. Accounting, Organizations and Society 34 (6), 738-754.

Mouritsen, J. & Kreiner, K. 2016. Accounting, decisions and promises. Accounting, Organizations and Society 49, 21-31.

Nixon, B. 1998. Research and development performance measurement: a case study. Management Accounting Research 9 (3), 329-355.

Nixon, B. & Burns, J. 2012. The paradox of strategic management accounting. Management Accounting Research 23 (4), 229-244.

Nuntamanop, P., Kauranen, I. & Igel, B. 2013. A new model of strategic thinking competency. Journal of Strategy and Management 6 (3), 242-264.

Nutt, P. C. 1998. How Decision Makers Evaluate Alternatives and the Influence of Complexity. Management Science 44 (8), 1148-1166.

OECD, E. 2005. Oslo manual: Guidelines for collecting and interpreting innovation data.

Pärl, Ü 2014. The role of dialogue between executives and ground-level employees mediated by MACS. Baltic Journal of Management 9 (2), 189-212.

Pastra, Y. 2009. The Rules of the Game: Teaching MBA Students. null 18 (1), 105-108.

Patton, M. Q. 2002. Qualitative research and evaluation methods. Thousand Oaks. Sage Publications.

Pauwels, L. 2010. Visual Sociology Reframed: An Analytical Synthesis and Discussion of Visual Methods in Social and Cultural Research. Sociological Methods & Research 38 (4), 545-581.

Pesämaa, O. 2017. Personnel-and action control in gazelle companies in Sweden. Journal of Management Control 28 (1), 107-132.

Pfeffer, J. 2007. A Modest Proposal: How We might change the Process and Product of Managerial Research. AMJ 50 (6), 1334-1345.

Pfeffer, J. & Fong, C. T. 2002. The End of Business Schools? Less Success Than Meets the Eye. AMLE 1 (1), 78-95.

Pisano, G. P. 2019. The Hard Truth About Innovative Cultures. Harvard Business Review 97 (1).
Puhakka, H. 2017. The role of accounting in making sense of post-acquisition integration. Scandinavian Journal of Management 33 (1), 12-22.
Quattrone, P. 2009. Books to be practiced: Memory, the power of the visual, and the success of accounting. Accounting, Organizations and Society 34 (1), 85-118.
Ravenscroft, S. P., Rebele, J. E., St. Pierre, K. & Wilson, R. M. S. 2008. The importance of accounting education research. Journal of Accounting Education 26 (4), 180-187.
Rebele, J. E. & St. Pierre, E. K. 2015. Stagnation in accounting education research. Journal of Accounting Education 33 (2), 128-137.
Reimer, M., Van Doorn, S. & Heyden, M. L. M. 2016. Managers and management control systems in the strategy process. Journal of Management Control 27 (2), 121-127.
Revellino, S. & Mouritsen, J. 2015. Accounting as an engine: The performativity of calculative practices and the dynamics of innovation. Management Accounting Research 28, 31-49.
Rigby, D., Sutherland, J. & Takeuchi, H. 2016. embracing agile How to master the process that's transforming management. Harvard business review (5).
Ruane, M. 2016. Action learning in postgraduate executive management education: an account of practice. null 13 (3), 272-280.
Rubin, R. S. & Dierdorff, E. C. 2009. How Relevant Is the MBA? Assessing the Alignment of Required Curricula and Required Managerial Competencies. AMLE 8 (2), 208-224.
Ruth, D. 2017. What is your MBA for? What’s the story? Management Learning 48 (1), 7-22.
Ryan, G. W. & Bernard, H. R. 2003. Techniques to Identify Themes. Field Methods 15 (1), 85-109.
Sajasalo, P., Auvinen, T., Takala, T., Järvenpää, M. & Sintonen, T. 2016. Strategy implementation as fantasising – becoming the leading bank. Accounting and Business Research 46 (3), 303-325.
Samuel, S. 2018. A conceptual framework for teaching management accounting. Journal of Accounting Education 44, 25-34.
Sanjay, D., Swati, D. & Payel, S. 2018. Defining and developing a scale to measure strategic thinking. Foresight 20 (3), 271-288.
Saukkonen, N., Laine, T. & Suomala, P. 2018. Utilizing management accounting information for decision-making: Limitations stemming from the process structure and the actors involved. Qualitative Research in Accounting & Management 15 (2), 181-205.
Scapens, R. W. 2006. Understanding management accounting practices: A personal journey. The British Accounting Review 38 (1), 1-30.
Schreier, M. 2014. Qualitative content analysis. Teoksessa Flick & Uwe (toim.) The SAGE handbook of qualitative data analysis.London: Sage Publications, .
Schreier, M. 2012. Qualitative content analysis in practice. Sage publications.

Sethi, R. & Iqbal, Z. 2008. Stage-gate controls, learning failure, and adverse effect on novel new products. Journal of Marketing 72 (1), 118-134.
Silverman, D. 2001. Interpreting qualitative data: Methods for analysing talk, text and interaction Sage Publications Ltd. London.
Simons, R. 1995. Levers of Control: How Managers Use Innovative Control Systems to Drive Strategic Renewal. Harvard Business Press.
Simons, R., Russ-Eft, D., Preskill, H., Tejada, R. A., Delgado Negrini, S., ym. 2000. Performance measurement and control systems for implementing strategy. IICA, Tegucigalpa (Honduras) Instituto Nacional Agrario, Tegucigalpa ….
Skærbæk, P. & Tryggestad, K. 2010. The role of accounting devices in performing corporate strategy.
Slagmulder, R. 1997. Using management control systems to achieve alignment between strategic investment decisions and strategy. Management Accounting Research 8 (1), 103-139.
Smith, M. & Taffler, R. J. 2000. The chairman's statement ‐ A content analysis of discretionary narrative disclosures. Accounting, Auditing & Accountability Journal .
Smith, W. K. & Lewis, M. W. 2011. Toward a theory of paradox: A dynamic equilibrium model of organizing. Academy of management Review 36 (2), 381-403.
Stacey, R. D. 1992. Managing the unknowable: Strategic boundaries between order and chaos in organizations. John Wiley & Sons.
Steenkamp, N. & Northcott, D. 2007. Content analysis in accounting research: the practical challenges. Australian Accounting Review 17 (43), 12-25.
Stiles, D. R. 2004. Pictorial representation. Sage London.
Suomala, P., Lyly-Yrjänäinen, J. & Lukka, K. 2014. Battlefield around interventions: A reflective analysis of conducting interventionist research in management accounting. Management Accounting Research 25 (4), 304-314.
Taipaleenmäki, J. 2014. Absence and variant modes of presence of management accounting in new product development–theoretical refinement and some empirical evidence. European Accounting Review 23 (2), 291-334.
Tatikonda, M. V. & Rosenthal, S. R. 2000. Successful execution of product development projects: Balancing firmness and flexibility in the innovation process. Journal of Operations Management 18 (4), 401-425.
Tavakoli, I. & Lawton, J. 2005. Strategic thinking and knowledge management. Handbook of Business Strategy 6 (1), 155-160.
Teece, D. J. 2010. Business Models, Business Strategy and Innovation. Long Range Planning 43 (2), 172-194.
Teittinen, H. & Auvinen, T. 2014. Kontrollin käsite muutoksessa: Käskytyksestä kohti asiantuntijaohjausta. EJBO: Electronic Journal of Business Ethics and Organization Studies 19 (2).
ter, B. H. & van, H. J. 2012. The practical relevance of management accounting research and the role of qualitative methods therein: The debate continues. Qualitative Research in Accounting & Management 9 (3), 265-273.

Tervala, E., Laine, T., Korhonen, T. & Suomala, P. 2017. The role of financial control in new product development: empirical insights into project managers' experiences. Journal of Management Control 28 (1), 81-106.

Tillmann, K. & Goddard, A. 2008. Strategic management accounting and sense-making in a multinational company. Management Accounting Research 19 (1), 80-102.

Tucker, B. P. 2017. Figuratively speaking: analogies in the accounting classroom. null 26 (2), 166-190.

Tushman, M. L., O'Reilly, C., Fenollosa, A., Kleinbaum, A. M. & McGrath, D. 2007. Relevance and Rigor: Executive Education as a Lever in Shaping Practice and Research. AMLE 6 (3), 345-362.

Vaivio, J. 2008. Qualitative management accounting research: rationale, pitfalls and potential. Qualitative Research in Accounting & Management .

van der Meer‐Kooistra Jeltje & Ed, V. 2012. Research paradigms, theoretical pluralism and the practical relevance of management accounting knowledge. Qualitative Research in Accounting & Management 9 (3), 245-264.

von Alberti‐Alhtaybat Larissa & Al‐Htaybat Khaldoon 2010. Qualitative accounting research: an account of Glaser's grounded theory. Qualitative Research in Accounting & Management 7 (2), 208-226.

Weber, R. P. 1990. Basic content analysis. Sage.

Weick, K. E. 1995. Sensemaking in organizations. Sage.

Whittington, R. 2011. The practice turn in organization research: Towards a disciplined transdisciplinarity. Accounting, Organizations and Society 36 (3), 183-186.

Whittle, A. & Mueller, F. 2010. Strategy, enrolment and accounting: the politics of strategic ideas. Accounting, Auditing & Accountability Journal 23 (5), 626-646.

Will, S. 2012. Some proposals for impactful management control research. Qualitative Research in Accounting & Management 9 (3), 228-244.

Ylinen, M. & Gullkvist, B. 2014. The effects of organic and mechanistic control in exploratory and exploitative innovations. Management Accounting Research 25 (1), 93-112.

Zabriskie, N. B., Huellmantel, A. B. & Huellmantel, A. B. 1991. Developing strategic thinking in senior management. Long Range Planning 24 (6), 25-32.

Zott, C. & Amit, R. 2010. Business Model Design: An Activity System Perspective. Long Range Planning 43 (2), 216-226.

Zott, C., Amit, R. & Massa, L. 2011. The Business Model: Recent Developments and Future Research. Journal of Management 37 (4), 1019-1042.

Zweifela, C. & Van Wezemaela, J. 2012. Drawing as a qualitative research tool an approach to field work from a social complexity perspective. Tracey Journal: Drawing Knowledge 5, 1-16.

ORIGINAL PAPERS

I

NARRATIVES ON THE ACCOUNTING WORLDVIEW OF PRACTISING MANAGERS

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Narratives on the Accounting Worldview of Practising Managers

Pasi Aaltola & Marko Järvenpää

Abstract

This paper examines management accounting from the perspective of its most important user: practising managers. We seek to enhance the understanding of the relationship between managerial work and accounting. This interpretative and qualitative study takes a unique approach by using narrative texts for building an understanding of how managers view accounting in their work. First, a deeper understanding of accounting and managerial work is sought on the basis of learning experiences of managers. Second, a wider point of view is achieved by looking at managers' perspectives on organizational development. Third, the study addresses managers' objectives for building their personal competence in accounting. This study presents a four-dimensional framework for the worldview of practising managers regarding accounting, with an emphasis on the multidimensional nature of managerial work.

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1 Introduction

What is the true accounting competence of a manager? I think the answer is crowdsourcing. A leader can only succeed together with others, with cooperation. This culture of working together allows questions, uncertainty and success. (Director)

This study looks at management accounting from the perspective of managerial work. Despite recent studies focusing on practising managers (Tayles, Pike and Sofian 2007, Jordan and Messner 2012, Burkert, Fischer and Schäffer 2011), there remains a lack of knowledge on managers and accounting. This article seeks to fill this gap by investigating how managers view accounting in their work. Management accounting is typically studied from the perspective of accounting professionals and doctrines, emphasizing its tools and systems, its challenges, and the changing roles of accountants (Granlund and Lukka 1997, Järvenpää 2001, Järvenpää 2007, Malmi et al. 2001, Vaivio and Kokko 2006, Hyvönen et al. 2015, Lepistö et al. 2017, Ylä-Kujala et al. 2017). This article explores accounting as part of managerial work not from the perspective of accounting professionals but from that of practising managers. Multilayered qualitative analysis is employed in creating a framework for the accounting worldview of a practising manager. This worldview has important implications for research on accounting and the profession as a whole.

In management accounting research, there is growing recognition of the importance of understanding the living practice of management accounting (Jönsson 1998, Hall 2010, Chua 2007, Malmi and Granlund 2009, Malmi 2005, Hopwood 2007) and of making an impact on it (Birnberg 2009, Bogt and van Helden 2012, Scapens 2006, van der Meer-Kooistra and Vosselman 2012). However, despite this growing recognition of its importance, studies concentrating on how managers view accounting are rare, and the approaches to studying accounting and managerial work have also been criticized. Chua (2007) states that accounting is a practical activity, yet we often choose to study it from a distance, through surveys and mathematical formulae. One route to greater knowledge, she suggests, is to rediscover accounting as a contingent, lived verb rather than as an abstract noun. This article responds to this call by focusing not just on the use of accounting information, but on comprehensively exploring the relationship between accounting and managerial work. This study contributes to the literature by forming an understanding of how managers view accounting through the thinking of managers working in various organizations. The contribution of this study is grounded in the unique qualitative narrative texts written by 48 managers themselves. The topic of managers and accounting was approached from three perspectives, a structure which allowed richer data to be collected. These perspectives can be considered as this study's areas of interest and as building blocks for further insight.

1. *Learning experiences reflect how the relationship with and understanding of accounting has evolved during managers' careers.*
2. *Organizational development describes managerial needs for accounting development in its applied organizational context.*
3. *Personal competence building frames the essential competence development themes and areas for practising managers.*

This study's domain of inquiry was approached, as Kelle (2005) appropriately phrases it, with an open mind. Utilizing a qualitative research approach developed within grounded theory (Glaser and Strauss 1967, Glaser 2009, Bryant and Charmaz 2007, Alberti-Alhtaybat and Al-Htaybat 2010, Evans 2013, Gurd 2008a, 2008b), this research offers an inductively developed four-dimensional framework that illustrates the accounting worldview of managers. The findings of this article meet the need noted by various authors that management accounting research should bring the practical reality of management more into focus (e.g. Jönsson 1998, Hall 2010, Ahrens and Chapman 2007a). They also indicate that it is not the production and usage of numbers that managers mainly reflect upon, but instead it is the essence of the accounting mindset and actions as part of their managerial work that they consider to be vital.

The rest of this paper is organized as follows. Section 2 contains a review of the literature on accounting and managerial work, building the foundation for this study's motivation and contribution. Section 3 explains the article's research methods, data collection and data analysis. Section 4 describes the results in terms of the three perspectives and also draws together an overall framework of practising managers' views on accounting. In Section 5, the implications of this research are discussed and suggestions for further research are offered.

2. Managerial work and accounting

The understanding of managerial work offers a motivational starting point for this study. By observing what managers actually do in their work, Mintzberg (1973, 1975) found that instead of planning, organizing, coordinating and controlling, managers' activities seemed to be characterized by brevity, variety and discontinuity. Kotter (1982) emphasized the complexity of executive roles and revealed that managers constantly confront information uncertainty and must rely on others in order to accomplish things. Tengblad (2006) found that many of Mintzberg's propositions on management work remained valid, but also discovered differences (increased workload, more interaction in groups, less administrative work and more emphasis on giving information). However, Holmberg and Tyrstrup (2010) have recently emphasized that management is far from knowing everything before doing anything. In their study of 62 managers, they found that the biggest difficulty in a manager's daily work was the need to 'draw the map while orienteering'. This interplay of action and interpretation has been defined as sensemaking (Tillman and Goddard 2008, Sajasalo et al. 2016, Weick 1995), which aims to create awareness and understanding. Thus, skill and the act of managerial work should be seen as a systemic and continuous flow of actions that involve interaction with various stakeholders, and is based on information from many sources, including management accounting.

In their recent review of managerial work research, Korica et al. (2017) concluded that research in the 2000s began to re-examine the fundamental question of what managers actually do, especially in post-bureaucratic organizational contexts. Organizations, their management and control have become less characterized by top-down command and more by shared values and day-to-day interactions (Teittinen and Auvinen 2014). In addition, the business model, meaning the design or architecture of an organization's value creation (Teece 2010), has also become part of the scope of management. These changes offer an inspiring starting point for management accounting research as well. Gerdin et al. (2014) state that so far there has been little interest in management research in how accounting is implicated in managerial work. This study approached this field by advising respondents to think about accounting issues in general without using any limiting (albeit well-established) concepts such as financial accounting, management accounting and so on. Since the issue has been approached from the perspective of managerial work, the data mainly focused on the phenomena found in the management accounting field. Previous work in this area is reviewed in the following section.

There have been a number of calls to promote a managerial work perspective in management accounting research. Jönsson (1998) has stated that management accounting research lacks empirical input from managerial work. More recently, Hall (2010) argued that despite Jönsson's (1998) suggestion, subsequent research has produced few studies that seek to really understand how managers engage with accounting information in their work. He calls for further research to examine how and why managers use accounting information. It has also been argued that management research in general should have more of an effect on actual practice in organizations (Pfeffer 2007) and that to achieve this methodologies and theories related to the organizational reality (Seal 2012) should be adopted. Furthermore, management accounting is perhaps too inward facing (Birnberg 2009) and researchers sometimes choose to stay on the 'safe side' by only trying to understand the practice rather than suggesting how to improve it (ter Bogt and van Helden 2012).

Scapens (2006) concludes that research over the decades has provided a clearer understanding of management accounting practices, but the challenge remains of how research can produce relevant insight for practitioners and have more of an impact on practice. In a similar vein, also Burns, Hopper and Yazdifar (2004) recognize the achievements of the management accounting research, but see the lack of cooperation between business practitioners and educational institutions as a challenge. Strategic management accounting , with its techniques designed to support the competitive strategy of the organization, has aimed to strengthen the connection between accounting and the practice of management (Bromwich 1990). Yet strategic management accounting has also been found to be failing in this respect (Järvenpää 2007, Langfield-Smith 2008, Nixon and Burns 2012). Hopwood (2007) has also expressed concerns about the lack of innovation in accounting research. He suggested that accounting could be studied in its full diversity and complexity if the research community strengthens its links to practitioners. This study responds to these challenges by seeking to paint a more holistic picture about the nature of accounting in managerial work.

A recent research stream focusing on practice in organizational studies, called the 'practice turn' (Ahrens and Chapman 2007a, Skaerbaek and Tryggestad 2010, Wittington 2011, Sajasalo et al. 2016), also supports this study's connection to practice. Moreover, management accounting researchers have been advised to assume a more participatory role in organizational problem-solving through, for example, constructive (Kasanen, Lukka and Siitonen 1993, Labro and Tuomela 2003), action and interventionist research (Suomala et al. 2014), not to mention conventional interpretive case studies (Lukka 2005) that emphasize the nature of the actual reality in organizations. Despite this perceptible drift towards a practice-based approach in management accounting research, few recent studies have focused more deeply on practising managers. Such earlier studies have examined managers' perceptions of management accounting practices with a survey (Tayles, Pike and Sofian 2007), illuminated managers' attitudes towards the incompleteness of performance indicators via a longitudinal field study (Jordan and Messner 2012) and surveyed managers' responses to the controllability principle (Burkert, Fischer and Schäffer 2011). In addition to these few studies, there appears to be only case-based research typically focused on accounting change. Overall, the research lacks an in-depth, first-hand understanding of management accounting from the perspective of managers.

This article, on the basis of the analysed literature on managerial work and suggestions made in the management accounting research, seeks to understand accounting from the perspective of managerial work by utilizing innovative and practice-oriented theoretical frameworks and methodological approaches.

3. Research methods and data

3.1. Research methodology

This research can be characterized as interpretative accounting research, seeking an understanding of the everyday practice of accounting by looking at the actors', that is, the practising managers', perceptions and definitions of the situation (Chua 1986). This is accomplished by collecting and systematically analysing qualitative data. The methodological setting of this research is in its pursuit of insight into the complexity of meanings, and in the ways it elucidates the experiences and views of practitioners, largely inspired by grounded theory (Glaser and Strauss 1967). Studies using grounded theory methodology are likely to begin with a question as a starting point rather than choosing an existing theoretical framework. In the content analysis of the grounded theory approach, phenomena found in the data are identified and described. These findings are then related to each other to form conceptual categories, which become the basis for a new theoretical explanation of the studied phenomena. The basic idea of grounded theory as a qualitative research methodology is that it uses a systematic set of procedures to develop an inductively derived theory (Strauss and Gorbin 1990).

Grounded theory has been used (e.g. Cohanier 2014, Bowyer and Davis 2012, Tillman and Goddard 2008, Goddard 2004, Norris 2002, Parker 2001) and suggested as a methodology for management accounting research (Parker and Roffey 1997, Elharidy, Nicholson and Scapens 2008). As a methodology, it offers great potential for subjects with a strong human dimension (Goulding 1999), such as managerial work. As a practice-based research approach, it offers a means of reducing the perceived gap between theory and practice (Lye, Perera and Rahman 2006). In cases for which there are few studies, it is plausible to let conclusions emerge from empirical data rather than from pre-existing theory.

Since the first publication of *The Discovery of Grounded Theory* (Glaser and Strauss 1967), the way in which the methodology should be employed has diverged into two paradigms, Glaserian and Straussian, and more recently into a third, the constructivist approach (Bryant and Charmaz 2007). According to Elharidy et al. (2008), accounting researchers have preferred Strauss and Corbin's (1990) version of the method, which allows the researcher to predefine research questions while also opting for more structured steps in analysing data, whereas von Alberti-Alhtaybat and Al-Htaybat (2010) have argued for the more open, more general Glaserian approach in interpretative accounting research. The third school of grounded theory, the constructivist approach, resembles Strauss and Corbin's view by starting with a more specific research question in mind, examing the literature earlier and constructing the theory from data instead of discovering it (Evans 2013). Concerns have also been raised about using grounded theory in management accounting research, with the suggestion that the justification to label research as grounded theory research is sometimes lacking (Gurd 2008a, 2008b). Because of this rather diverse variety of views on how to appropriately use grounded theory and even on how to design qualitative studies that draw inspiration from its methodology, it is essential to identify the starting points of the research and to describe the process explicitly. Even for inductive research, it is clear that no qualitative research project starts out as a tabula rasa, completely lacking any choices and mental presuppositions. Making these conceptual starting points for research transparent helps avoid being ignorant of and unreflective about its philosophical, methodological and theoretical underpinnings (Lukka 2010). One motivation of this research is to bring more empirical input from managerial work into the field of management accounting research, a call to action presented by previous researchers (e.g. Jönsson 1998, Hall 2009, Malmi and Granlund 2009). A second impetus for the research project design is the assumption that we need to understand management accounting from a more multidimensional perspective as part of managerial work. The research problem is general in nature, broadly defined as to investigate how managers view accounting in their work. The *what* and the *why* of the research purpose are initially outlined, after which the data are allowed to speak for themselves.

3.2. Research data

Approaching accounting from the perspective of managerial work is a demanding task. It is uncommon for an experienced manager to have an in-depth understanding of accounting and management. Hence, essays written by managers were selected as a source of data. Although it may be easy to speak at length about a certain topic, conceptualizing one's understanding in writing demands a more considered thought process. Compared to an interview, the writing process also allows time to reflect on one's views and the possibility of structuring the output across several periods of time.

The respondents were participants of the Executive MBA programme of the University of Jyväskylä. The 48 respondents came from 40 organizations of varying sizes and industries, including the public sector. The essays include experiences and views based on the respondents' entire previous working experience. Therefore, the opinions and interpretations in this study are based on many organizational realities, more than the amount of different organizations the respondents were currently working for. The average age of the respondents was 42 years. They had an average of 14 years' experience working in managerial positions. Of the 48 respondents, 34 were male.

The aim of the research was explained to the respondents with a presentation. Respondents were informed about the plan to use the essays in the university's research activities and they were given the opportunity to prohibit further use of their writing. (Nobody chose that option.) The respondents were given a document including the basic briefing for the assignment and a recommendation for the optimal length of the essay (three to six pages of written text). The threefold briefing (in Appendix 1) was used to separate the essay data collection from a traditional classroom exercise in which people are often removed from their organizational and professional contexts. It directed the respondents to think about accounting based on their past real-life experiences, from their organization's developmental perspective and as a key competence area for them professionally. The respondents wrote the essays during the autumn of 2012. To accumulate a sufficient amount of data, essays were collected from two EMBA student cohorts (27 essays + 21 essays). All 48 essays were written by different people. The combined material was 214 pages of written text (4.5 pages per essay, on average).

3.3. Data analysis

Data analysis was conducted with a qualitative research approach developed in grounded theory. The data from the two groups of respondents were first analysed and interpreted separately in three phases. First, the essays were read without any attempt to identify themes or make conclusions. The idea was to form an overall picture of the data and to make preliminary remarks on the texts, pinpointing highlights in the respondents' stories. In the second phase, the essays were read again and observations were made on the individual texts and placed into three columns, each representing one of the key perspectives of the research. At this point of the data analysis, all of the findings from the essays (three findings per perspective per essay, as instructed in the essay briefing) were set forth as code lists, again without any effort to form themes or exclude anything. In some essays, the three issues asked about for each perspective were made explicit, even unambiguously marked with subtitles. In contrast, some respondents described incidents or their plans in a broader narrative format, which left the researcher the task of interpreting these stories and assigning them appropriate labels. The structure provided for the essays made this open coding phase of the analysis a bit easier. Shifts in content formed natural markers for themes, since the essays were structured according to the three issues per perspective. These transitions, as Ryan and Bernard (2003) describe them, were used in order to identify expressions. The fact that the respondents had time to reflect upon their experiences, express themselves and come up with conclusions also produced rather refined material. In the third stage, the data were scrutinized in order to identify themes. The versatile cutting and sorting (Ryan and Bernard 2003) technique used in this phase involved arranging expressions into groups of items that went together. Eventually, a preliminary classification system started to emerge. At this stage the aim was still not to verify any given theory, but instead to allow relevant theoretical constructs to emerge. After the first round of forming themes from the code lists, the number of themes was large. For each of the three perspectives, there were five to ten subcategories of themes. Those themes were subsequently refined and combined in order to illustrate three to four key themes in each category.

Two essay sets were collected at different times during the autumn of 2012. This enabled the researchers to take some distance from the data before collecting and coding the next set. Both sets of essays were analysed separately at first. Though no significant differences were found between the sets, gathering the data in two phases increased flexibility and made the process of data analysis more iterative because it doubled the analysis phase before making any final conclusions. Before combining the data for final analysis, the preliminarily themes from each data set were also presented to the respondents to ensure consensual validation (Patton 2002) of the results. Furthermore, discussions with the respondents after presenting the results provided further insights into the data, which formed a good basis on which to combine the data sets and enter into the phase of ratifying the final results. Other researchers were also involved in the analysis process with both sets of data. By making the raw data (i.e. the original essays), code lists and preliminary interpretations available to others, additional perspectives and insights were gained well before entering the stage of combining the data sets and making the final conclusions. The last stage of the final analysis was carried out by combining the original code lists from both data sets and once again forming themes. After this, the final summarizing theoretical conceptualization (Section 4.4.) about managers and accounting was made. The next section presents the categorized themes of each of the three perspectives.

4. Results

4.1. Learning experiences

Narratives on learning experiences included three different themes: understanding the business model, actions and experiences, and living practices.

Understanding the business model

Many managers highlighted a period of time or an incident during which they had come to understand the wider context of accounting and management in their work, realizing the overall operating frame of what they do in terms of money and value creation. Alternatively, such a realization was about being able to see the essential parts and activities of the organization through a financial mindset.

> *One of the most important highlight moments during my career regarding management accounting was when I realized that accounting from the management point of view is like a decathlon. It is not enough to pay attention to one single thing, but instead you have to understand that it is about the sum of all moving parts. (Manager)*

This holistic general understanding of how the organization operates can be called the business model, meaning the ways in which company creates, delivers and captures value (Teece 2010, Zott et al. 2011). However, the insight and personal understanding here called *understanding the business model* was sometimes realized through smaller projects, as one manager suggested:

> *On a project level the aim of financial management is clear. Set objectives have to be achieved; exceeding them is desirable. (Manager)*

These included, for example, being a project manager with financial responsibility for a specific venture. Experience was also gained outside of the respondents' main professional activities (e.g. experience in their free-time acting in a role with financial responsibility in an organization). Nonetheless, these so-called smaller projects can be interpreted as reflections of phenomena similar to that of understanding the business model. Many organizations are large and complex with complicated structures and operating models. When it comes to realizing the cause and effect of organizational functions in terms of money, smaller issues are more easily observable and understood. Without being an entrepreneur or being in charge of a coherent organizational unit, learning in practice can result from small projects where the lived reality of management accounting is observable, from beginning to end.

Actions and experiences

Whereas the *understanding the business model* theme was about seeing and realizing the organizational context, the *actions and experiences* theme concerned managerial actions and initiatives. Descriptions of active and justified cost management were common in the narratives.

> *Many people think that large corporate customers and the competencies needed to serve them are so unique that you can't speak about cost effectiveness in the same context with them. I consider one of my professional highlights that I have been able to show how even the service for a large corporate customer can be made more efficient using the lessons from mass-market customers. (Department manager)*

The narratives often featured demanding moments. These moments included times when management accounting and cost management actions were prioritized and became a bigger part of practising managers' work. Determining the optimal, most cost-efficient way to do business was emphasized. However, along with cost management, a second type of story emerged. These stories, here called *investing for success*, portrayed a second compelling aspect of practising managers and accounting: building the capacity for future revenue. The cost management stories were more about individual concrete actions carried out in the short term, whereas investing in success experiences had a more future-oriented, long-term perspective.

> *In one's personal life, monthly income is almost fixed, so quite rarely can you increase revenues or cut costs by making investments. This leads to thinking where the most economical way to deal with different situations is to minimize costs. When I was working in R&D, I realized at some point that this is*

not the case in the context of my professional work. Saving money from purchases and resources is often the biggest waste of money. (Manager)

Living practices

The *living practices* theme was a narrative essentially about communication and interaction. The word *living* describes how accounting is brought to life as part of an organization and its practices. The word also characterizes continuing ways of dealing with management accounting information.

Good management accounting is constant attention to financial issues. One-time cost cutting campaigns are effective as such, but it tends to go like weight-loss diets do. Once the diet period is over, the kilos start crawling back. (Director)

Narratives regarding this theme dealt with things like best practices for financial communication inside the company, ways in which accounting information was dealt with in management team meetings, creating a common focus on financial issues, and so on (Chua 2007, Partanen 2007, Ahrens and Chapman 2007a, Jordan and Messner 2012).

4.2 Organizational development

Narratives on organizational development included four different themes: financial consciousness, managing with a profitability mindset, relevance in accounting and, finally, business partnering (i.e. controller support).

Financial consciousness

Many narratives reflected a need to produce a more profound understanding of profitability issues in an organization. Transparent and unambiguous financial communication and information sharing was sought, which meant putting financial issues more firmly on the agendas of different meetings.

Management accounting in my work is not mainly about budgeting or analyzing competitors. It is about linking financial thinking in everyday management. It is about increasing my personnel's understanding of how their own actions are linked to rather complex things like strategy, profitability, balance sheet etc. (Manager)

Additionally, instead of just distributing already established information, there was a perceived need to build a more comprehensive financial mindset among managers, experts and other personnel in the organization.

My goal is that all the people in my unit understand how their actions affect our revenues and costs. I want to teach them financial thinking, because afterwards they learn that they are able to develop and guide their own actions by themselves in a direction that affects our bottom line. (Director)

This financially oriented mindset can be called cost consciousness (Velasquez et al. 2015, Shields et al 1994) or, as a broader concept, financial consciousness, because it often included aspects of revenue formation in addition to costs, as demonstrated in the previous quotation.

Managing with a profitability mindset

Instead of pursuing an increase in financial consciousness throughout the organization, the theme of *managing with a profitability mindset* more clearly placed the actions of an individual manager into focus.

Personally, I get a feeling of success when I can show that implemented actions, aimed at helping us to reach our budget goals, are really effective in practice. (Director)

These actions included initiatives on how to intensify the profitability aspect in managerial work through various methods, such as focusing on the right things, designing compensation systems and incentives, investing in certain activities and cutting unnecessary costs. As one director noted:

It is essential to address inefficient processes and working methods. The fact that you have to lay off a person from an unprofitable *business unit is not real management of the profitability. Real management is about making such changes to the operations that the profitability will improve. (Director)*

It was noteworthy, however, that issues in this theme were generally future-oriented and strategic in nature in the studied narratives. There were some cost-management initiatives and aspects involved, but the main focus was still on looking ahead, not just on cost cutting.

Relevance in accounting

The third theme emerging from the narratives on organizational development was *relevance in accounting*. There were a variety of needs to produce relevant management accounting information in the form of different types of analysis.

Our current (management accounting) model has created this company, and I am not completely denying its functionality. In the business markets of the future, however, we need facts about which things are economically viable and which are not. Competition is intensifying, and then you have to invest in things that really are profitable. (Manager)

Developing relevance in accounting also included practices of reporting and producing performance measurement information in various ways. Overall, these demands for increasing the practical relevance of management accounting echoed similar suggestions presented in previous research (e.g. Lukka 2005, Malmi and Granlund 2009, ter Bogt H. and van Helden J. 2012, Hall 2010)

Business partnering

The fourth narrative theme related to dealing with accounting functions within the organization. These development suggestions were connected to both personal interaction (with controllers) as well as to accounting systems.

There are competent professionals working in the accounting department, who however appear to the business managers only as persons setting limitations. The expertise of these accounting people should be brought closer to the everyday business decision-making, which often determines the ultimate financial success of the company (Director).

Although this fourth theme was not pronounced in any explicit way, it was identifiable as a distinct theme in the data and was practical in nature. Interestingly, it dealt with the widely studied practical challenge of increasing controller support in the form of changing the roles of management accountants (Granlund & Lukka 1997, Järvenpää 2001, Malmi et al. 2001, Vaivio & Kokko 2006, Hyvönen et al. 2015, Lepistö et al. 2017), but in this case it illuminated the managers' perspective on the issue.

4.3 Personal competence building

These narratives included themes related to sensemaking, strategic financial foresight, accounting knowledge, and finally, sensegiving.

Sensemaking

The continuing intention to see one's own managerial context, responsibilities and actions through a financial lens was surprisingly pronounced, given the relatively long managerial experience (14 years on average) of the respondents.

I see that a manager's accounting competence is an overall understanding of financial issues from the bottom up and from the top down. You should understand which streams generate the business's revenues and costs and how you can affect those. Respectively, a manager should have an overall understanding of the components of profitability of operations. (Manager)

Learning in this area was seen as improving an individual's thinking skills, as well as one's personal and organizational capabilities to become more astute in proceeding from plans to action.

You have to know the sandbox where you *play. You also have to know the other players. When the dynamics and characteristics of this environment are constantly observed, and you are aware of your own strengths, this understanding sets frames also for financial management. (Manager)*

Sensemaking is also a social process where managers seek to understand their past, their current situation and their future activities (Tillman & Goddard 2008, Sajasalo et al. 2016). It is an interplay of action and interpretation, driven more by plausibility than by accuracy (Weick 1995, Weick et al 2005). This constant redrafting of one's understanding seemed to be a continuing area of personal development.

Strategic financial foresight

This theme involved reading macroeconomic trends and their potential impact, strategic agility and resilience, goal-setting and performance monitoring in the companies.

General knowledge of macroeconomics is necessary. The direction of the development of our field of business and general trends define also the direction where we should develop our own operations. (Director)

What I hate the most are surprises. Surprises on your birthday or the pranks made by kids are nice, but this business is our work, and it should be predictable. (Country manager)

Strategic financial foresight was essentially about the manager's ability to proactively understand the essential changes and the potential financial effects relevant to one's own business. In addition, this theme highlighted the anxiety of dealing with the unknown.

Financial knowledge

There was a predictable but important need to learn more about fundamental accounting knowledge (e.g. interpretation of financial statements) and problem-solving calculations (related to pricing, customer profitability, comparing different alternatives, etc.).

Based on my experience, an increase in the staff's accounting competence lowers the threshold between management and personnel when discussing financial issues. Working becomes more professional and you don't have to make financial decisions only in a small group (for example, the management team). Especially when the markets are low, implementing cost-cutting is easier when the personnel have learned to read the financial signals in the same way as the management. The challenge of raising the competence level of the staff is in the competence level of the manager himself. If you are uncertain about your own accounting knowhow, the threshold to teach others is too high. (Manager)

Basic financial knowledge was thus seen as an important part of managerial competence in order to being able to manage the different challenging managerial situations one is facing in the business, like market downturns and cost cuttings indicated in the quotation above.

Sensegiving

These stories often concentrated on how to present financial information in a clear, inspiring and efficient way in different meetings and situations.

In many organizations I have noticed that personnel divide into two groups. There are those who are competent or are at least interested in financial issues and another group of people who don't feel competent and are not interested. A good manager can communicate financial issues in a way that everybody understands and sees how they can affect (the bottom line). This creates commitment and motivates people to act efficiently and keeps the interest on a higher level regarding financial issues. (Account manager)

There was another crucial aspect regarding sensegiving and competence building: how to become personally passionate about financial issues. Strong positive feelings guide actions and strengthen cognitive processes. If you are really interested in something, you learn and perceive a richer dimension of the issue. This emphasis on personal learning links sensegiving to sensemaking, as Gioia and Chittipeddi (1991) found in a strategic change context.

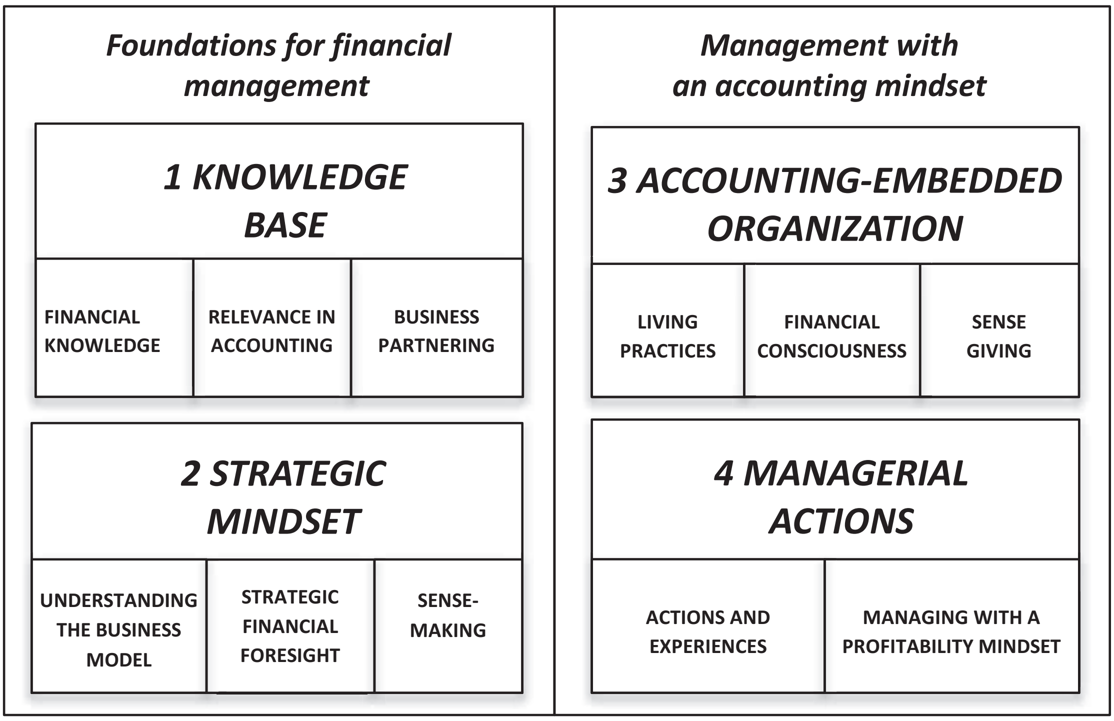
4.4 Practising managers and accounting: elaborating a framework

The systematically formed themes presented before were collected utilizing a multidimensional (learning experiences, organizational development, personal competence building) approach in order to obtain richer data. However, these themes in this threefold structure are insufficient as a result for this research. In order to seek a more complete understanding of management accounting from the perspective of managerial work, further theorizing was conducted. The inductively formed themes were elaborated into a collection of categories through which substantive theory grounded in the data started to unfold. The process of constructing the framework via data analysis was presented in section 3.3.

The literature review was conducted in line with a grounded theory approach by trying to avoid early closure and limitations on the direction of the research. Before and during the data collection, the literature was reviewed only in order to motivate and position the research (see Section 2). The vast majority of the reading was done after collecting the data, at a point when the emerging theoretical interpretation of the data was already considerably developed (see Section 4). The literature was used to challenge and support interpretations that had been formed and to locate the findings within the existing research.

Figure 1 presents a framework of managers´ concepts of accounting, detailing the subject of the research. The first category,

Figure 1. Framework for the accounting worldview of a practising manager



knowledge base, emphasizes the competencies and information resources managers considered to be essential. The second category, *strategic mindset*, highlights a comprehensive understanding and continuous learning regarding the organization's business model and an individual's managerial area of responsibility in that setting. By providing information, insight and understanding, these two form foundations for financial management for a practising manager. The third category, *accounting-embedded organization*, highlights the all-pervading nature of financial issues in organizations. The fourth category, *managerial actions,* describes the concrete actions of managers from an accounting standpoint. Together, *accounting embedded-organization* and *managerial actions* describe management with an accounting mindset, with its organizational managerial practices and concrete actions.

1 Knowledge base

The appropriate production of relevant accounting information, sufficient accounting competencies, and fluent business-focused cooperation with the organization's accounting professionals form the knowledge base of accounting for a practising manager. This area of the narratives is the most unambiguous of the four and is likely the one in which management accounting research and accounting professionals are the most ready to contribute today. The fundamental accounting knowledge of a manager is a starting point for embedding accounting in the organization. If managers feel insecure about their personal accounting competencies, engaging the organization is beyond their comfort zone – and even an act for which they are unqualified. In addition, the production of a sufficient level of objective and reliable accounting information by the organization is needed to avoid subjectivity, which can reduce mission clarity and motivation (Rinsum and Verbeeten 2012). The indicated controller support illuminated the managerial expectations on the potential help and advice they would like to receive from the accounting function, reported earlier from the perspective of the accounting profession (Granlund and Lukka 1997, Malmi 2001, Järvenpää 2001, Vaivio and Kokko 2006, Järvenpää 2007, Hyvönen et al. 2015, Lepistö et al. 2017).

2 Strategic mindset

The narratives indicated an emphasis on the continuing need for managers to frame the whole picture and to see one's managerial area of responsibility and its development in financial terms, that is, in terms of money. In the minds of practising managers, this strategic mindset should be seen as an ongoing process of constructing and interpreting the dynamics of building a successful business organization, as well as one's personal role in that setting. This not only includes reacting to the immediate challenges presented in terms of accounting information, but also calls for accounting practices emphasizing anticipatory foresight. The concept of strategic mindset can also be interpreted as an area in which formal accounting systems fail to meet the information needs of practising managers (Järvenpää 1998). There seems to be a need for a broader concept than the specific unofficial accounting system based on non-legitimate records presented by Kilfoyle et al. (2013), something closer to the holistic presentation of sensemaking from a management accounting perspective also described by previous researchers (Tillman and Goddard 2007, Heidmann et al. 2008, Burchell et al. 1980). The managerial need for a strategic mindset points to what Neely and Al Najjar (2006) and Hall (2011) emphasize in the context of performance measurement when they discuss learning and mental-model development in designing management accounting practices.

3 Accounting-embedded organization

Managers wanted to embed accounting practices and understanding more deeply in their organizations. This desire corresponds with several existing voices in management accounting research. There is a challenge for management accounting to promote strategic intent and commitment along with organizational profit consciousness (Järvenpää 2007). The usefulness and relevance of management accounting information is determined not only by the content of strategic ideas, but by the ways in which they are mobilized (Jørgensen and Messner 2010) and by how managers use the information in verbal discussions (Hall 2010). From a practising manager's point of view, the main goal is not only to produce the right numbers, but also to build an accounting-embedded organization, incorporating accounting information with organizational activities and managerial practices in the most productive way. This is challenging because individual differences affect how strategic information is perceived (Lowe et al. 2011) and social processes as well as interaction affect what makes accounting information more persuasive (Rowe, Shields and Birnberg 2012).

This challenge leads to the question of how management accounting could be seen as a useful learning device (see Burchell et al. 1980). In other words, it is not just about giving the right numerical answers, but about building a profitability-related strategic mindset (Järvenpää 1998). The findings of this research point to the reasons why experienced managers see the potential in this. Today's increasingly flexible and lower hierarchy organizations are managed more by shared values, meanings and mindsets co-created through interaction instead of by rules, routines and rigid control (Teittinen and Auvinen 2014). Organizations are not only top-down. Instead there exists greater interactional needs to jointly build comprehension about the key aspects connected to the organization's success and performance. In addition to empowering people, a manager needs to create the basis for employees to act as well as to facilitate distributed knowledge creation. This need echoes Jönsson's (1998) assertion about the consequences of aligning management accounting research with managerial work. A greater focus on communication emerges, as does an assumption that management accounting information is for use in various communicative contexts (Pärl 2012), not directly in decision-making models. How management accounting information is delivered and processed shapes the organizational reality (Gerdin et al. 2014). Accounting can be seen as learned social practices through which individuals shape their understandings (Bryer 2011). Dialogue between accounting and the organization (Brown and Dillard 2015) illustrates that practising managers see embedding accounting in the organization as part of their professional managerial role and responsibility. It also reveals that it is not merely an increase in available and more accurate accounting information that is needed, but rather the co-creation of knowledge on financial consciousness, which in turn may lead to changes in the organizational mindset as well as in people's behaviour.

4 Managerial actions

Managers are action-focused, as famously phrased by Peter Ducker (1974). The strategic mindset of a manager, an accounting-embedded organization and a knowledge base still form an incomplete set, kind of a prerequisite, without the concrete actions of managerial work. This aspect emphasizes the importance of understanding the relationship between managerial work and accounting. Using numbers can be considered to be a privilege for management (Vollmer 2007). Previous studies have illustrated that the use of accounting information and numbers in leadership positions is far from an insignificant factor. Abernethy (2004) states that a manager's formal authority has an impact on how he/she uses accounting information. Leadership styles have also been shown to affect the use of management accounting systems (Abernethy, Bouwens and van Lent 2010), as well as the reactions of those who receive the information (Jansen 2010). Acting as a manager and management accounting systems are deeply interrelated phenomenon. Overall, the results of this study are not so much about accounting numbers as such. A practising manager sees accounting not as a separate and detached thing. Instead, the manager optimally views it as a cohesive part of his/her work as a manager. An 'accounting in action' approach might not only help us to identify which approaches work, but also what working in a situated activity actually means in practice (Chua 2007).

5. Discussion

In this study we have used a grounded theory approach to develop a theoretical framework for understanding accounting in the context of managerial work, an area in which there has been surprisingly little previous work. Inductive interpretative research has earlier approached the issue mainly through longitudinal case studies. Instead of a specific case setting, this study took a unique approach by exploring the experiences, opinions and reflections of 48 experienced managers coming from various organizations. The following describes the implications of this study for accounting research and the profession as a whole.

Implications for accounting research

The results of this study highlight the importance of continually deepening the understanding of accounting in the context of managerial work. In addition to responding to a general call to provide more practice-focused accounting research (Jönsson 1998, Hall 2010, Chua 2007, Malmi and Granlund 2009, Malmi 2005, Hopwood 2007), this research outlines what the practice of accounting in managerial work actually is. This is essential contribution since theory plays a crucial role in designing practice-oriented management accounting research. Malmi and Granlund (2009) argue that current accounting theories and the role of those theories fail to provide valid support for practitioners and sometimes the pre-adopted theory defines what is considered to be interesting in a research project. For accounting researchers, it should be noted that accounting is only one of many activities in an organization, and it is often considered only as a support function. As Tillman and Goddard (2008) stated, accounting is not a reality in itself, but part of a broader organizational reality. Along similar lines, Jorgensen and Messner (2010) suggested that studying accounting where it intersects with other activities might also increase interest in other disciplines. This paper focused on accounting through managerial work and discovered that accounting research should not only emphasize retrospective control and change descriptions, but concentrate on the future-oriented building of successful organizations. This corresponds with Ahrens and Chapman's (2007b) view of how the focus of accounting research should be not only on resistance and control, but also on the potential of management control systems for action.

This study also provides a methodological contribution to accounting research by presenting a unique case in which managers' written reflective texts are used as data. So far, accounting research has used texts mainly in content analysis of the narrative portions of annual reports and other forms of organizational communication (e.g. Smith and Taffler 2000, Steencamp and Northcott 2007). Reflective texts have been used as learning diaries documenting a learning process (e.g.

Eskola 2011) or as research diaries to assist in gaining an understanding in case studies (e.g. Lewis et al 2005). However, in management accounting research to date, there has been no use of reflective personal narratives from various experienced executives. Using self-produced texts could thus be encouraged in studies where it fits the research setting and there is a possibility to produce that kind of material. Writing as a method offers many benefits. It compels the respondents to think in a more concentrated way than in an interview, in which they can more easily speak open-endedly about a certain topic. The writing process also allows more time for reflection, and the possibility of structuring the output over several periods.

Implications for the accounting profession

It is worth noting that management accountants are more or less missing from the narratives studied. The research setting has probably affected this, and accountants do exist in the background, but their general absence from the spotlight is an interesting observation. The themes in organizational development, for example, were more attached to management than to accounting activities, and even the need for relevant figures does not explicitly entail that they should be produced by management accountants. This research is in line with claims by Burns et al. (2004) in which they argue that the longevity of the role of management accountant should not be taken for granted. In addition, Hopwood (2007) states that accounting has become a less isolated phenomenon in organizations and that it is widely used by many types of workers other than accounting professionals. Management accountants face the challenge of making an impact in the world of practising managers.

From the perspective of the accounting profession, it is also surprising that different initiatives regarded as so-called strategic management accounting methods were not more pronounced here. It could be expected, for example, that when managers are offered a possibility to present their visions and views on how to develop management accounting, more suggestions would be presented related to various strategic management accounting practices. This is in line with the findings of Langfield-Smith (2008), who has raised concerns about the lack of interest instrategic management accounting and the low level of adoption. Nixon and Burns (2012) continue the criticism by stating that there is a contradiction between the decline of strategic management accounting and the growth in the number of concepts and frameworks in the strategic management domain. They argue that the literature on strategic management accounting has neglected several developments in the field. The results support this discussion by suggesting that the managerial mindset on management accounting is not merely a collection of different strategic ways for counting euros – or even of strategic accounting techniques at all – but instead a more multidimensional way of looking at strategy, organizations, people's actions and interaction in general. The findings of this study could be used to reinforce the accounting perspective in managerial work in organizations.

Limitations and directions for future studies

This study contains some limitations. First, this article only partially explores the dynamics and complexity of managerial work as an interaction of local actors. Although the conclusions are built on the respondents coming from different organizations, it is obvious that this research distances itself from building an in-depth understanding of any specific organizational setting. Future research is needed to investigate the essence of accounting in managerial work across different organizational settings and in varying managerial job positions. Another limitation is the nature of the data itself: What are managers capable of saying about such a large and complex issue? The article is built on their narratives, that is, the understandings they provide within the given frame of data collection, and no additional data collection was conducted to acquire further information. The focus of this qualitative research has been on building an initial theoretical framework for the accounting worldview of practising managers. Future research could expand the understanding of managerial work and accounting by further developing, examining and applying this study's four-dimensional framework with more details in various contexts. In addition to researchers, management accountants as well as general managers themselves could look at their organizations through the four-dimensional model and examine the following questions: Is the appropriate strategic mindset in place and does a relevant accounting knowledge base exist? Is accounting embedded in organizational practices and when viewed through an accounting lens, are the necessary managerial actions being taken?

References

Abernethy, M. A. (2004), Power, organization design and managerial behavior, *Accounting, Organizations and Society*, 29:3-4, 207-225.

Abernethy, M. A., Bouwens, J., Van Lent, L. (2010), Leadership and control system design, *Management Accounting Research*, 21:1, 2-16.

Ahrens, T. and Chapman, C. (2007a), Management accounting as practice, *Accounting, Organizations and Society*, 32:1-2, 1-27.

Ahrens, T. and Chapman, C. (2007b), Theorizing practice in management accounting research, In: C. S. Chapman, A. G. Hopwood, M. D. Shields, eds. *Handbook of Management Accounting Research* Volume 1. Amsterdam: Elsevier, 99-112.

Alberti-Alhtaybat, L. and Al-Htaybat, K. (2010), Qualitative accounting research: An account of Glaser's grounded theory, *Qualitative Research in Accounting & Management*, 7:2, 208-226.

Birnberg, J. (2009), The case for post-modern management accounting: Thinking outside the box, *Journal of Management Accounting Research*, 21:1, 3-18.

Brown J., and Dillard J. (2015), Dialogic accountings for stakeholders: On opening up and closing down participatory governance, *Journal of Management studies*, 52, 961-985. DOI: 10.1111/joms.12153

ter Bogt H. and van Helden J. (2012), The practical relevance of management accounting research and the role of qualitative methods therein: The debate continues, *Qualitative Research in Accounting and Management*, 9:3, 265-295.

Burkert M., Fischer F. M., Schäffer U. (2011), Application of the controllability principle and managerial performance: The role of perceptions, *Management Accounting Research*, 22:3, 143-159.

Bowyer, D. and Davis, G. (2012), How to acquire aircraft? A grounded theory approach to case study research, *Qualitative Research in Accounting & Management*, 9:4, 363-397.

Bromwich, M. (1990), The case for strategic management accounting: The role of accounting information for strategy in competitive markets, *Accounting, Organizations and Society*, 15:1/2, 27-46.

Bryant, A. and Charmaz, K. (2007), *The Sage Handbook of Grounded Theory*, Sage publishing.

Bryer, A. R. (2011), Accounting as learnt social practice: The case of the empresas recuperadas in Argentina, *Accounting, Organizations and Society*, 36:8, 478-493.

Burchell, S., Clubb, C., Hopwood, A., Hughes, J., and Nahapiet, J. (1980), The roles of accounting in organizations and society, *Accounting, Organizations and Society*, 15:1, 5-27.

Burns, J., Hopper, T., Yazdifar, H. (2004), Management accounting education and training: putting management in and taking accounting out, *Qualitative Research in Accounting and Management*, 1:1, 1-29.

Chua, W., F. (1986), Radical developments in accounting thought, *The Accounting Review*, 61:4, 601-632.

Chua, W., F. (2007), Accounting, measuring, reporting and strategizing – re-using verbs: A review essay, *Accounting, Organizations and Society*, 32: 4-5, 487-494.

Chua, W., F. (2011), In search of "successful" accounting research, *European Accounting Review*, 20:1, 27-39.

Cohanier, B. (2014), What qualitative research can tell us about performance management systems, *Qualitative Research in Accounting and Management*, 11:4, 380-415.

Drucker, P., F. (1974), *Management: Tasks, responsibilities, practices*. New York: HarperCollins.

Elharidy A., Nicholson B., and Scapens, R. (2008), Using grounded theory in interpretive management accounting research, *Qualitative research in accounting & management*, 4:2, 139-155.

Eskola, A. (2011), *Good learning in accounting: phenomenographic study on experiencies of Finnish higher education students*, Jyväskylä studies in business and economics, University of Jyväskylä.

Evans, G., L. (2013). A novice researcher's first walk through the maze of grounded theory: Rationalization for classical grounded theory, *Grounded Theory Review*, 12:1, 37-55.

Gerdin, J., Messner, M., and Mouritsen, J. (2014), On the significance of accounting for managerial work, *Scandinavian Journal of Management,* 30:4, 389-394.

Gioia, D., A., Chittipeddi, K. (1991), Sensemaking and sensegiving in strategic change initiation, *Strategic Management Journal,* 12:6, 433-448.

Glaser, B. and G., Strauss, A., L. (1967), *The Discovery of Grounded Theory*, Chicago: Aldine.

Glaser, B., G. (2009), The novice GT researcher, *Grounded Theory Review*, 8:2, 1-21.

Goddard, A. (2004), Budgetary practices and accountability habitus: A grounded theory, *Accounting, Auditing and Accountability Journal*, 17: 4, 543-577.

Goulding, C. (1999), *Grounded theory: some reflections on paradigm, procedures and misconceptions,* Working paper 006, Wolverhampton, University of Wolverhampton.

Gurd, B. (2008), Remaining consistent with method? An analysis of grounded theory research in accounting, *Qualitative Research in Accounting and Management*, 5:2, 122-138.

Granlund, M. & Lukka, K. (1997), From bean-counters to change agents: The Finnish management accounting culture in transition, *The Finnish Journal of Business Economics* 46:3, 213-255.

Hall, M. (2010), Accounting information and managerial work, *Accounting, Organizations and Society*, 35:3, 301-315.

Hall M. (2011), Do comprehensive performance measurement systems help or hinder managers' mental model development?, *Management Accounting Research*, 22: 2, 68-83.

Heidmann, M., Schäffer, U., Strahringer, S. (2008), Exploring the role of management accounting systems in strategic sensemaking, *Information Systems Management*, 25:3, 244-257.

Holmberg, I. and Tyrstrup, M. (2010), Well then –What now? An everyday approach to managerial leadership, *Leadership*, 6:4, 353-372.

Hopwood, A. (2007), Whither accounting research?, *The Accounting Review*, 82:5, 1365-1374.

Hyvönen, T., Järvinen, J., and Pellinen, J. (2015), Dynamics of creating a new role for business controllers, *Nordic Journal of Business*, 64:1, 21-39.

Jansen, E., P. (2010), The effect of leadership style on the information receivers' reaction to management accounting change, *Management Accounting Research*, 22: 2, 105-124.

Jordan, S. and Messner, M. (2012), Enabling control and problem of incomplete performance indicators, *Accounting, Organizations and Society*, 37:8, 544-564.

Jorgensen, B. and Messner, M. (2010), Accounting and strategising: A case study from new product development, *Accounting, Organizations and Society*, 35:2, 184-204.

Järvenpää, M. (1998), Strateginen johdon laskentatoimi ja talousjohdon muuttuva rooli, *Series of the Turku School of Economics and Business Administration, Series D-3:1998.*

Järvenpää, M. (2001), Connecting management accountants' changing roles, competencies and personalities into the wider managerial discussion – A longitudinal case evidence from the modern business environment, *The Finnish Journal of Business Economics* 50:4, 431-458.

Järvenpää, M. (2007), Strategy and management accounting retold: towards a narrative view to strategic management accounting, In: Granlund, M., eds. *Total Quality in Academic Accounting. Essays in honour of Kari Lukka*. Turku: Publications of the Turku School of Economics and

Business Administration, 81-108.

Järvenpää, M. (2007), Making business partners: A case study on how management accounting culture was changed, *European Accounting Review*, 16:1, 99-142.

Jönsson, J. (1998), Relate management accounting research to managerial work!, *Accounting, Organizations and Society*, 23:4, 411-434.

Kasanen, E., Lukka, K., Siitonen, A. (1993), The constructive approach in management accounting research, *Journal of Management Accounting Research*, 5:1, 241-264.

Kelle, U. (2005), Emergence' versus 'forcing' of empirical data? A crucial problem of 'grounded theory' reconsidered, *Qualitative Social Research*, 6:2, 1-17.

Kilfoyle, E., Richardson, A., J., and MacDonald, L.D. (2013), Vernacular accountings: Bridging the cognitive and the social in the analysis of employee generated accounting systems, *Accounting, Organization and Society*, 38:5, 382-396.

Korica, M., Nicolini, D., and Johnson, B. (2017), In search of 'Managerial Work': Past, present and future of an analytical category, *International Journal of Managerial Reviews,* 19:2, 151-174.

Kotter, J.P. (1982), *The General Managers*. New York: Free Press

Labro, E. and Tuomela, T-S. (2003), On bringing more action into management accounting research: process considerations based on two constructive case studies, *European accounting review*, 12:3, 409-442.

Langfield-Smith, K. (2008), Strategic management accounting: how far have we come in 25 years?, *Accounting, Auditing & Accountability Journal*, 21: 2, 204-228.

Lepistö, L., Järvenpää, M., Ihantola, E.M., and Tuuri, I. (2016), The tasks and characteristics of management accountants: Insights from Finnish recruitment processes, *Nordic Journal of Business*, 65:3-4, 76-82.

Lewis K., Sligo F., Massey C. (2005), Observe, record, then beyond: Facilitating participant reflection via research diaries, *Qualitative Research in Accounting & Management*, 2:2, 216-229.

Lowe, D. J., Carmona-Moreno, S., and Reckers, P.M.J. (2011), The influence of strategy map communications and individual differences on multidimensional performance evaluations, *Accounting and Business Research*, 41:4, 375-391.

Lye, J., Perera, H., and Rahman, A. (2006), Grounded theory: A theory discovery method for accounting research. In: Hoque Z., ed. *Methodological issues in accounting research*. London: Spiramus Press.

Lukka, K. (2005), Approaches to case research in management accounting: The nature of empirical intervention and theory linkage. In: Jönsson, S. & Mouritsen, J., eds. *Accounting in Scandinavia – The Northern Lights*, 375-399.

Lukka, K. (2010). The roles and effects of paradigms in accounting research, *Management Accounting Research,* 21:2, 110-115.

Malmi, T., Seppälä, T., and Rantanen, M. (2001), The practice of management accounting in Finland: A change?, *The Finnish Journal of Business Economics*, 50:4, 480-501.

Malmi, T. (2005), Kohti käytännöllisiä teorioita liiketaloustieteessä, toiveajatteluako?, *Finnish Journal of Business Economics*, 4, 553-559.

Malmi, T. and Granlund, M. (2009), In search of management accounting theory, *European Accounting Review*, 18:2, 597-620.

Mintzberg, H. (1973), *The Nature of Managerial Work*, New York: Harper & Row.

Mintzberg, H. (1975), The manager's job: Folklore and fact, *Harvard Business Review*, 53:4, 49-61.

Neely, A. and Al Najjar, M. (2006), Management learning, not management control: The true role of performance measurement, *California Management Review*, 48:3, 101-114.

Nixon, B. and Burns, J. (2012), The paradox of strategic management accounting, *Management Accounting Research*, 23:4, 229-244.

Norris, G. (2002), Chalk and cheese: Grounded theory case studies of the introduction and usage of activity-based information in two British banks, *The British Accounting Review*, 34:3, 223-255.

Patton, M., Q. (2002), *Qualitative research & evaluation methods*. London: Sage Publications.

Parker, L.D. (2001), Reactive planning in Christian bureaucracy, *Management Accounting Research*, 12:3, 321-356.

Parker, L.D. and Roffey, B.H. (1997), Methodological themes: Back to the drawing board: Revisiting grounded theory and the everyday accountant´s and manager's reality, *Accounting, Auditing and Accountability Journal*, 10:2, 212-247.

Partanen, V. (2007), Talousviestintä johtamisen tukena. Talentum, Jyväskylä.

Pfeffer, J. (2007), A modest proposal: How we might change the process and product of management research, *Academy of Management journal*, 50:6, 1334-1345.

Pihlanto, P. (2006), Tarvitsemme sekä teoriaa että käytännön yritystoimintaa palvelevaa tutkimusta, *Finnish Journal of Business Economics*, 3, 381-387.

Rowe, C., Shields, M., D., and Birnberg, J.G. (2012), Hardening soft accounting information: Games for planning organizational change, *Management Accounting Research*, 37:4, 260-279.

Ryan, G.,W. and Bernard, H.,R. (2003). Techniques to identify themes, *Field Methods*, 15:1, 85-109.

Sajasalo, P., Auvinen, T., Takala, T.Järvenpää, M., and Sintonen, T. (2016), Strategy implementation as fantasising – becoming the leading bank, *Accounting and Business Research,* 46:3, 303-325.

Scapens, R. (2006), Understanding management accounting practices: A personal journey, *The British Accounting Review*, 38:1, 1-30.

Seal, W. (2012), Some proposals for more impactful management control research, *Qualitative Research in Accounting and Management*, 9:3, 228-244.

Shields, M.D. and Young, S.M. (1994), Managing innovation costs: A study of cost consciousness behavior by R&D professionals, *Journal of Management Accounting Research,* 6:175.

Smith, M. and Taffler, R. J. (2000), The chairman's statement – A content analysis of discretionary narrative disclosures, *Accounting, Auditing & Accountability Journal*, 13:5, 624-647.

Steencamp, N. and Northcott, D. (2007), Content analysis in accounting research: the practical challenges. *Australian Accounting Review*, 17:43, 12-25.

Strauss, A. and Corbin, J. (1990), *Basics of qualitative research: grounded theory procedures and techniques*, Thousand Oaks, CA: Sage Publications.

Suomala, P., Lyly-Yrjänäinen & Lukka, K. (2014), Battlefield around interventions: A reflective analysis of conducting interventionist research in management accounting, *Management Accounting Research*, 25:4, 304-314.

Teece, D.J. (2010), Business models, business strategy and innovation, *Long Range Planning*, 43:2-3, 172-194.

Tengblad, S. (2006), Is there a "New Managerial Work"? A comparison with Henry Mintzberg's classic study 30 years later, *Journal of Management Studies*, 43:7, 1437-1461.

Skaerbaek, P. and Tryggestad, K. (2010), The role of accounting devices in performing corporate strategy, *Accounting, Organizations and Society*, 35:1, 108-124.

Tayles, M., Pike, R., and Sofian, S. (2007), Intellectual capital, management accounting practices and corporate performance, *Accounting, Auditing and Accountability Journal*, 20:4, 522-548.

Teittinen, H. and Auvinen, T. (2014). Kontrollin käsite muutoksessa: käskytyksestä kohti asiantuntijaohjausta. *Electronic Journal of Business Ethics and Organization Studies*, 19:2, 17-26.

Tillman, K. and Goddard, A. (2008), Strategic management accounting and sense-making in a multinational company, *Management Accounting Research*, 19:1, 80-102.

Vaivio, J. and Kokko, T. (2006), Counting big: Re-examining the concept of the bean counter controller, *The Finnish Journal of Business Economics*, 55:1, 49-74.

Van der Meer-Kooistra, J. and Vosselman, E. (2012), Research paradigms, theoretical pluralism and the practical relevance of management accounting knowledge, *Qualitative Research in Accounting and Management*, 9:3, 245-264.

Van Rinsum, M. and Verbeeten, F.H.M. (2012), The impact of subjectivity in performance evaluation practices on public sector managers' motivation, *Accounting and Business Research*, 42:4, 377-396.

Vollmer, H. (2007), How to do more with numbers: Elementary stakes, framing, keying, and the three-dimensional character of numerical signs, *Accounting, Organizations and Society*, 32:6, 577-600.

Weick, K.E. (1995), Sensemaking in organizations, Thousand Oaks, CA: Sage.

Weick, K.E., Sutcliffe, K., M., Obstfeld, D. (2005), Organizing and the process of sensemaking, *Organization Science,* 16:4, 409-421.

Whittington, R. (2011), The practice turn in organization research: Towards a disciplinary interdisciplinarity, *Accounting, Organizations and Society*, 36:3, 183-186.

Ylä-Kujala, A., Kinnunen, S.-K., Hyvärinen, T., Tynninen, L., Kärri, T., and Ryynänen, H. (2017) The state of management accounting symbolized by five clusters of companies, *Nordic Journal of Business*, 65:3-4, 55-75.

Zott, C., Amit, R., and Massa, L. (2011), The business model: Recent developments and future research, *Journal of Management*, 37:4, 1019-1042.

Appendix 1

Briefing of the essay data collection for the respondents

1. Learning experiences

(Write about the three top learning moments in your working history regarding managerial work and accounting)

2. Organizational development

(Write about three ways of developing accounting in your organization from a managerial work perspective)

3. Personal competence building

(Write about three accounting competence development areas that would be important for you personally as a manager)

II

STRATEGIC THINKING AND ACCOUNTING: POTENTIALS AND PITFALLS FROM A MANAGERIAL PERSPECTIVE

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ORIGINAL PAPER

Strategic thinking and accounting: potentials and pitfalls from a managerial perspective

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Abstract
This study explores the strategic thinking of managers from an accounting perspective. By building on interview data from managers working with strategic roles in various organizations, an understanding is offered of the experienced potentials and pitfalls of accounting in strategic thinking. The results are elaborated into a framework presenting the dual nature of accounting in strategic contexts. This study suggests that the benefits and pitfalls of accounting for strategic thinking constitute a paradoxical duality, which cannot be fully solved, but must be addressed by practising managers. The observed role of accounting in managers' strategic thinking also offers implications for management control in organizations.

Keywords Managerial work · Accounting · Strategic thinking · Management accounting · Management control

1 Introduction

Accounting is used to produce reports representing the past and the current situation, but what about the strategic foresight and visioning aspect of managerial work? This article aims to extend our understanding of the role of accounting in practicing managers' strategic thinking as they generate ideas for business model development, strategize in order to create success for the future and quantify their strategic plans and intentions in terms of desired financial outcomes. In addition to exploring the potential benefits of using accounting in a strategic thinking context, especially the limitations and pitfalls of such an approach are theorized in this study.

Previous studies have explored strategic thinking in managerial work (e.g. Zabriskie and Huellmantel 1991; Heracleous 1998; Liedtka 1998; Bonn 2001, 2005; Tavakoli and Lawton 2005; Nuntamanop et al. 2013). This literature highlights

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explicit business impacts by suggesting that strategic thinking should be hypothesis driven (Liedtka 1998) and emphasizes a rational approach (Bonn 2005) and analytical thinking ability (Nuntamanop et al. 2013) as part of strategic thinking. Yet this literature does not outline any specific ways that accounting might play a role in strategic thinking of managers. Even though accounting practices have been suggested to be central to organizations and their management (Brouthers and Roozen 1999; Miller and Power 2013), the connection of strategic thinking to accounting seems to be a rather unexplored area in research.

Literature on accounting and control has pointed to the importance of organizations' strategizing and innovation activities (Davila et al. 2009; Simons 1995, 2000). The traditional view of management control systems in which they are considered to merely implement strategies (Anthony 1965), has been questioned. The management control literature suggests that the formulation and implementation of strategies are interdependent and that the role of the people at different levels of the company is to work actively to maintain the viability of their organization (Otley 1994; Kaplan and Norton 2004). There is also an extensive tradition in contingency-based research of examining management control emphasizing structures rather than actors (Chapman 1997; Chenhall 2003). However, the existing literature on accounting and control has been criticized for concentrating too much on organization-level analysis (Davila et al. 2009; Tervala et al. 2017; Chenhall and Moers 2015), which therefore creates the need to understand individual actors. There have been a number of calls to promote a managerial perspective in accounting research and aligning accounting research more with the actual practice of managerial work (e.g. Chua 2007; Jönsson 1998; Gerdin et al. 2014; Hall 2010). However, in spite of some recently published papers that focus on practicing managers (Goretzki 2013; Tayles et al. 2007; Jordan and Messner 2012; Burkert et al. 2011; Pfister et al. 2017), there seems to be little, if any, research focusing on the essence of accounting from the personal standpoint of individual managers. This study is inspired by these observations, therefore the individual manager, instead of the organization, is chosen as the unit of analysis in an attempt to understand accounting in the context of strategic thinking.

There are many published studies describing the dual nature of accounting, with its positive and negative effects (e.g. Denis et al. 2006; Nutt 1998; Frishammar 2003; Kutschera and Ryan 2009; Cooper et al. 2001; Whittle and Mueller 2010; Mastilak et al. 2012). The use of management control systems has also been characterized as a duality of enabling and coercive controls (Adler and Borys 1996; Ahrens and Chapman 2004). Furthermore, it has been found that the perception of coercive and enabling form of control can change over time (Jordan and Messner 2012) and coexist simultaneously (Adler 2012). This study approaches the dual nature of accounting recognized in the previous literature by adopting a practice-oriented approach (Lövstål and Jontoft 2017), examining the tensions that managers confront specifically in their strategic thinking. The research question of this study is as follows: What are the ways in which experienced managers find accounting useful in strategic thinking and what are the disadvantages they have experienced? With this aim, the present study responds to calls to study subjective mechanisms and informal systems of control (Reimer et al. 2016; Tervala et al. 2017; Martyn et al. 2016) and aims to extend the understanding of contemporary research by providing explanations for why accounting is often seen to be problematic and, therefore, absent (e.g. Choudhury 1988; Taipaleenmäki 2014) in strategic contexts.

A qualitative interpretative research approach is adopted to expand our view by interviewing 23 experienced managers from various organizations and exploring the ways in which accounting plays a role in their strategic thinking. The results are formed through qualitative content analysis (Hsieh and Shannon 2005) building on Bonn's (2005) definition of strategic thinking, seeing it as a way of solving strategic problems that combines a rational and convergent approach with creative and divergent thought processes. The results of this study show that accounting is found to be useful, but simultaneously also having its disadvantages in a variety of strategic thinking contexts. Organizational accounting and management control practices were found to set frames for the individual's strategic thinking, discouraging managers from quantifying their strategic intentions and using accounting in their strategic endeavours. The results build an understanding of accounting's role in strategic thinking, extending it from the components of making a decision into the initial framing of the strategic setting and setting the choices made into motion. The results are elaborated into a framework presenting the dual nature of accounting suggesting that the benefits and pitfalls of accounting for strategic thinking constitute a paradoxical duality, which cannot be fully solved, but must be addressed by practising managers. The theoretical contribution of this study includes the observed dual role of accounting in managers' strategic thinking and its implications for management control in organizations. These findings help us to understand contradictory yet interrelated paradoxical elements (Smith and Lewis 2011) of accounting and managers' need to address these competing demands simultaneously.

The rest of this article is organized as follows. Section 2 contains the literature review. Section 3 describes the methodological setting and interview data collection. Section 4 lays out the study's main results. Section 5 makes conclusions and offers implications of this article, addresses limitations of the research and outlines avenues for further research.

2 Literature review

2.1 Strategic thinking

Strategic thinking has been defined in many ways. Näsi (1991) characterizes strategic thinking broadly, covering all attributes under the term that can be labelled strategic: "Strategic thinking extends both to the formulation and execution of strategies by business leaders and to the strategic performance of the total enterprise. It includes strategic analysis, strategic planning, organization and control and even strategic leadership" (Näsi 1991: 29). Mintzberg (1994) separated strategic thinking from strategic planning. He stated that strategic planning is an analytical process that programmes and formalizes already existing strategies, whereas strategic thinking involves intuition and creativity. This view is supported by Heracleous (1998) and Graetz (2002) who have also separated strategic thinking and strategic planning from one another, but stated that they are both important for strategic management. Bonn (2001) lists three elements of strategic thinking on an individual level: (1) holistic understanding about the organization and its environment, (2) creativity and (3) a vision for the future of the organization. Liedtka (1998) has defined strategic thinking as a particular way of thinking that consists of five elements: (1) systems perspective, (2) intent focused, (3) thinking in time, (4) hypothesis driven, and (5) intelligent opportunism. Kaufman et al. (2003) characterize strategic thinking from a managerial perspective as “practical dreaming”, that is, as creating an ideal future by defining and achieving results that add value.

Although there is no general agreement in the literature on how to specifically define strategic thinking, the need for such thinking is clear (Steptoe-Warren et al. 2011) and calls for further research supporting organizations’ attempts to innovate their business models have been made (Laamanen 2017). Thinking strategically—finding alternative strategies and business models to create customer value—has been stated as an important part of every manager’s job (Abraham 2005) and, furthermore, it has been suggested that the more an organization has people thinking strategically, the more readily it can respond to changes in the business environment (Tavakoli and Lawton 2005). There is existing research about the roles related to the work and performance of strategy practitioners in organizations (Nordqvist and Melin 2008), factors that influence strategic thinking at the organizational level (Moon 2013) and leadership practices that can encourage it in organizations (Goldman 2012). How strategic thinking develops in individuals has been explored (Goldman 2005; Dragoni et al. 2011), as has how it can be learned (Casey and Goldman 2010) and how it can be fostered through training (Benito-Ostolaza and Sanchis-Llopis 2014).

Three elements, which build on Bonn’s (2005) definition and pull together the widely shared perspectives in the literature, are used to define the characteristics of strategic thinking in this study. First, a holistic understanding of the organizational context (Bonn 2001, 2005) is emphasized to highlight a systems perspective, a mental model of ‘how the world works’ (Liedtka 1998). Second, a visionary and proactive perspective (Bonn 2001, 2005) is included, suggesting that strategic thinking is fundamentally about developing new ideas (Stacey 1992). Acknowledging that managers do “think about strategies” in the strategy execution phase as well, strategic thinking is approached in this study from the perspective of strategy development, as a future-oriented managerial activity, as seeking innovation and visions regarding the directions that the organization should pursue (Mintzberg 1994). A strategy execution perspective is addressed only in the sense of arguing for generated strategic initiatives in the organization, not in focusing on the actual implementation of the developed strategic initiatives. Third, an innovative and creative, business-focused approach to adding customer value (Bonn 2001, 2005) is included. The market orientation is also highlighted by Moon (2013) and Abraham (2005), who describe strategic thinking as finding alternative strategies and business models to create customer value. The use of this three-fold definition of strategic thinking in this study’s data selection is outlined in more detail in Sect. 3.

2.2 Strategic thinking and management accounting

The existing literature has recognized the significance of aligning accounting research more with the actual practice of managerial work (e.g. Chua 2007; Jönsson 1998; Gerdin et al. 2014; Hall 2010) and to the developments within the strategy field (Nyamori et al. 2001). Research on strategic management accounting (SMA) has aimed to strengthen the connection between accounting and strategic management (Roslender and Hart 2003). SMA can also be seen to reflect the corporate-level need for accounting information that could be more useful in strategic contexts (Cinquini and Tenucci 2010). Accounting and calculative practices have even been suggested to act as engines in seeing new business opportunities (Revellino and Mouritsen 2015). The literature on management control has approached the initial phase of strategy development from various perspectives. The traditional view where management control was seen as unsuitable for innovation and strategic development has been challenged (Chenhall and Moers 2015). Whereas management accounting practices such as the balanced scorecard (Kaplan and Norton 1996) are primarily focused on managing performance along an already chosen strategic path, Simon's levers of control framework (Simons 1995, 2000) was pivotal in emphasizing the interactive use of controls aiming at exploring the strategic uncertainties. However, despite the previous work, the existing research has been criticized for mainly focusing on exploring control issues within formal company practices and structures on an organizational level (Tervala et al. 2017; Chenhall and Moers 2015). Much of the prior research has concentrated on which accounting techniques are used and how and in what circumstances in organizations (e.g. Bisbe and Malagueno 2009; Chapman 1997; Chenhall 2003; Davila et al. 2009; Tervala et al. 2017; Chenhall and Moers 2015). To date, there has been very little attention on the use of accounting in strategic thinking from an individual manager's standpoint.

Some research does exist, however, that emphasizes individual actors' perspectives on the issue. Accounting's role in the management process has been explored from a cognitive point of view (Busch 1997), a sensemaking perspective (Gerdin et al. 2014; Puhakka 2017) and in how strategic initiatives are argued for (Dutton et al. 2001; Whittle and Mueller 2010). One interesting strand of accounting research has also been carried out in the area of innovation and new product development (e.g. Duhamel et al. 2014; Taipaleenmäki 2014; Jorgensen and Messner 2010; Davila 2000; Feeney and Pierce 2016; Nixon 1998). On the other hand, these settings are often manufacturing oriented and rather technical and structural by nature. Strauß and Zecher (2013) suggest that further research is needed since management control system approaches were developed at a time when most organizations were manufacturing products. This represents fairly precise and traditional contexts for accounting and decision-making. Even in these cases, management accounting has been found to be absent for various reasons, or when present, to provide the intended value to a limited extent. New product development and accounting studies typically build understanding about the adoption and use of different management control systems on a company level (Bisbe and Otley 2004; Bisbe and Malagueno 2009; Ditillo 2012; Mouritsen et al. 2009) instead of focusing, for example, on how decision-makers evaluate alternatives and use analytics in their strategic thinking.

Significant analysis and discussion on the variety of reasons for using formal analysis in strategic decision-making has been presented by Langley (1989). She found that analysis could be initiated for information purposes (aimed at gaining information for decision-making), persuasion and communication (in order to communicate ideas to others), direction and control (to ensure action on the part of subordinates), and symbolism (to convey a symbolic message about the strategic issue and intentions and actions regarding it). Mueller et al. (2007) have applied Langley's framework in their study of organizational performance. They decomposed the concept of rationality according to Langley's (1989) framework and related these subunits to firm performance, emphasizing the importance of the definition of rationality when examining its effects on organizational performance. Kaikkonen (1994) presents another attempt to combine various perspectives on the uses of accounting in strategic contexts into a framework. He proposed an original viewpoint by examining strategic thinking from an accounting perspective and as a conceptualization that occurs in an individual strategist's consciousness. He presents four areas where accounting could play a role in strategic thinking. First, accounting contributes to the construction of the strategist's own world-picture when an individual applies concepts of accounting in their interpretations of the enterprise. Second, accounting has a role in strategic thinking through possible means of analysis and analytical practice. Third, accounting may fulfil the need for conviction in alleviating the fundamental sense of uncertainty regarding the future. Fourth, accounting functions as means of communication, because strategic issues are typically objects of debate and change that are concerned with shared meanings.

Whereas Langley's (1989) framework is multidimensional in its presentation of decision process rationality, it is also limited in its chosen focus on examining written, documented analytical studies in companies around strategic decision-making and scoring them according to their length and analytical sophistication. Furthermore, Langley's model extends to the strategy implementation phase, whereas Kaikkonen's framework focuses specifically on strategic thinking, the initial phase of future-oriented managerial activity seeking innovation. For the reasons described before and taking into account the defined focus of this paper (the perspective of individual managers), Kaikkonen's conceptual and linguistic work is more appropriate for structuring the uses of accounting in strategic thinking in this study. The four areas of Kaikkonen's (1994) theoretical and linguistic work can be used to draw together various perspectives presented in the existing literature. Accounting's role in contributing to the *strategist's world-picture* resonates with research on the strategic alignment of development with corporate strategy (Akroyd et al. 2016; Slagmulder 1997) as well as the sensemaking perspective, where accounting is seen as forming organizational life and actors' interpretations of it (Gerdin et al. 2014; Puhakka 2017; Miller and Power 2013; Haukedal and Gronhaug 1994; Tillman and Goddard 2008). The second area, a*nalysis*, is consistent with the literature exploring accounting's role in evaluating strategic alternatives and using analytics in decision-making (e.g. Nutt 1998; Frishammar 2003). While it should be acknowledged that intuition plays a significant part in decision-making (Kutschera and Ryan 2009), it is essential to recognize that intuition alone does not constitute strategic thinking (Sloan 2014). The need for *conviction* echoes with perspectives addressing strategy as a creative interpretation of the future, where accounting and numbers bring plausibility and legitimacy to the setting (e.g. Goretzki 2013; Sajasalo et al. 2016; Weick 1995). In the same vein, Denis et al. (2006) suggest that the power of numbers is to fill the strategic void created by pluralism. The *communication* aspect is in line the literature on how strategic ideas are argued for and influenced (Dutton et al. 2001; Whittle and Mueller 2010; Lechner and Floyd 2011). The role of communication and interaction around strategic ideas also resembles Simon's (1995) idea of interactive controls and how management accounting and control systems could be regarded as communication platforms on strategic issues (Heidmann et al. 2008; Pärl 2014). The use of documented quantifications have been described as technologies of distance, well suited for communication that goes beyond the boundaries of locality (Porter 1995), expediting long-distance control (Robson 1992).

In addition to the previously described benefits of using accounting in strategic thinking, existing research has also pointed to the absence and various disadvantages of accounting in strategic contexts. Critical views have been presented about the use of accounting and calculative practices in future-oriented strategic planning (Cooper et al. 2001; Whittle and Mueller 2010) and the low involvement of management accounting in strategic decision-making (Brandau and Hoffjan 2010). Justified concerns have also been raised regarding the low-level adoption of SMA (Langfield-Smith 2008) and the contradiction between the decline of strategic management accounting (SMA) and the growth in the number of concepts and frameworks in the strategic management domain in general (Nixon and Burns 2012). Denis et al. (2006) suggest that the role and power of numbers might have unexpected consequences, detaching agency and the responsibility of actors and limiting their opportunities to make reasonable adjustments in their actions when needed. Furthermore, they conclude that numbers systems are always reductionist and rarely sufficient to deal with the complexity of strategy making. Mastilak et al. (2012) found that enhancing the BSC system with strategy maps might cause evaluators to hold managers more responsible for achieving success despite uncontrollable factors, leading to unintended consequences. In addition to drawing attention to these observed disadvantages of using accounting, previous research has also found accounting to be totally or partially absent in strategic contexts (Nixon and Burns 2012; Langfield-Smith 2008; Brandau and Hoffjan 2010; Taipaleenmäki 2014).

While previously described streams of literature offer a range of evidence for the benefits of accounting in strategic thinking and suggest possible reasons for accounting's absence, the results remain diverse. Taken together, the studies presented thus far provide evidence that accounting is seen to have both positive and negative effects in strategic contexts. For example, overuse of formal analysis, that is, the systematic study of issues, can lead to paralysis by analysis (Kast and Rosenzweig 1970; Langley 1995), but unaided intuition-driven human judgment is also frequently found to be flawed (Kahneman 2011). Managerial rationality has been suggested to be context specific (Haukedal and Gronhaug 1994). Frishammar (2003) found that the combination of using hard numerical and soft subjective information is contingent on the specific decision at hand. In a similar vein, Lechner and Floyd (2011) found that if strategic initiatives were more exploratory—meaning innovative undertakings with goals and methods that are inconsistent with an organization's current competencies—they were less likely to be successful in the resource allocation process. The existing literature, on the whole, suggests that accounting in a strategic thinking context is not a neutral thing, but could been seen as a duality, one with the potential to provide both advantages and disadvantages to the process.

Some recent studies have specifically addressed the dual nature of management accounting and control. A number of researchers have examined the actors' perceptions of management control as a duality of enabling control that allows actors to deal with the contingencies that arise in their work, and coercive controls enforcing compliance (Adler and Borys 1996; Ahrens and Chapman 2004). This stream of literature has found that the perception of coercive and enabling forms of control can change over time (Jordan and Messner 2012) and coexist simultaneously (Adler 2012). Recently, some scholars have addressed this problematic as a source of tension. Lövstål and Jontoft (2017) have suggested that the phenomena of management control and innovation can create tensions by presenting competing demands. Tensions related to accounting and control (arising from, e.g., seeing intuition and rationality as alternative decision-making strategies), have been suggested to be managed by paradoxical thinking, leveraging both approaches to the issue (Calabretta et al. 2017). This study responds to a suggestion to study the multidimensional and dynamic relationship between strategy and accounting (Chua 2007). Previous studies have recognized but not sufficiently addressed the duality of accounting in the context of strategy from the perspective of individual managers. This study responds to a call for further research by adopting a practice-oriented approach suggested by Lövstål and Jontoft (2017) and examines the tensions that individual managers confront in their strategic thinking.

3 Methodology and research design

This qualitative explorative research utilizes content analysis, which classifies data into fewer content categories, thereby providing a meaningful interpretation of the topic (Weber 1990; Patton 2002). Qualitative content analysis (QCA) is systematic (Schreier 2014), but it also makes it possible to leverage conceptual and analytical flexibility (Duriau et al. 2007). QCA can be applied with three distinct approaches: summative, directed and conventional (Hsieh and Shannon 2005). This study utilizes directed content analysis based on existing theory in defining its key concepts from the interview data on managers' use of accounting in the context of strategic thinking. Next, conventional content analysis with codes more inductively derived from the data is used to describe managers' views on the disadvantages of using accounting in strategic thinking.

The data were collected through a university executive MBA programme. The programme attracts executive students with substantial professional experience and it is internationally accredited by the Association of MBAs. The interviewees were chosen from among the EMBAs who graduated between March 2011 and March 2014. In order to gain as rich data set as possible, the interviewees (23) were selected from among all graduates (108) who addressed strategic thinking in their EMBA final thesis. The total of 108 theses included many kinds of projects on various managerial topics. In order to identify those reports that would provide data for examining the strategic thinking of managers, a refined lens derived from the theory (see Sect. 2.1) was used. All 108 EMBA theses were read and the ones that met all the following three criteria qualified for the group of theses reflecting strategic thinking.

1. Holistic understanding of the organizational context
   When studying strategic thinking from an accounting and managerial perspective, the inclusion of holistic understanding of the organizational context is well grounded. Without linking strategizing to the future of a specific organization, the managerial responsibilities, accountability and the use of resources would be excluded from the picture. Strategic thinking and accounting can only be adequately studied in the context of a firm.
2. A visionary and proactive perspective
   This future orientation excluded reports that reflected only on past development and that would possibly include accounting information produced after the original chain of events.
3. Innovative business-focused approach aiming to add customer value was the third criterion, and it aimed to include only those creative reports which had a clear connection to the future business models of the organization. Internal change plans or projects were excluded as well as theses focusing only on leadership and management issues.

The three criteria formed a strict filter for choosing the respondents for the interviews. The number of theses that met all three criteria was 26 of 108. The length of the 26 reports was 1754 pages in total and 67 pages on average. For an overview of the nature of the projects, see "Appendix A", which lists the titles of all 26 theses. All 26 managers were asked to be interviewed and all stated their willingness to participate. One respondent, however, was unavailable to attend an interview for practical reasons during the period of data collection. Two respondents were omitted from the interviews by the researcher since their job descriptions had changed and did not currently include managerial responsibilities with a strategic emphasis. Ultimately, 23 managers were interviewed during March–June 2015. The interviews were conducted in person, recorded and transcribed. Anonymity was guaranteed to the respondents before they participated in the interviews. The interviews lasted, on average, for 1 h and 8 min (shortest: 41 min; longest: 1 h and 36 min) and in total 27 h and 47 min. Fifteen interviewees currently held a position that included the title of director (e.g. managing director, development director), and seven held other managerial positions. In addition to the EMBA which they all had more recently completed, 9 interviewees held a master's level degree, 13 held a bachelor's or vocational degree and 1 had a doctoral degree. "Appendix C" presents descriptive details of the interviewees.

Rather open-ended questions were chosen to guide the course of the interviews. The interview themes were structured based on the literature review and categorized by reflecting the key themes of this study: managerial work perspective, strategic thinking, strategic thinking and accounting (see the agenda of the interviews in "Appendix B"). The aim was to encourage respondents to share practices they use and experiences they have had exceeding the officially set procedures in their organizations. In addition, the order of the topics discussed in interviews supported the aim of gaining their personal managerial view of the issue. The interviews started with more general questions and then progressed in stages to strategic issues. The questions covered the field of strategic thinking and accounting comprehensively, from more general questions about the respondents' work and their relationship with accounting to a discussion of how strategic initiatives are sold and gain legitimacy in an organization. Information about their EMBA projects was covered in the end as one example of strategy-related initiatives, so that experiences and characteristics from that specific case would not direct the whole course of the interview. The topic was approached without using any limiting, though well-established, concepts such as financial accounting or management accounting as a starting point. However, even the data collection was not, in principle, limited to management accounting, the data mainly focused on the phenomena found in the management accounting field.

In qualitative content analysis, the coding frame is at the heart of the method. In this study, the approach to the interview data was split into two phases that formed the main categories of its content analysis, with the code development and application being performed consecutively and separately. All the interview material was double-coded and the analysis was implemented according to the qualitative content analysis requirements for unidimensionality and mutual exclusiveness for coding frames (Schreier 2014). Unidimensionality of the interview data was achieved by approaching the research question with two dimensions featuring distinct subcategories, capturing only one aspect of the data at a time. The first main category was managers' use of accounting in strategic thinking. The coding categories were created in a concept-driven way from existing theory, with Kaikkonen's (1994) theoretical framework being adopted as a basis for organizing the data. The first round of analysis was carried out in order to determine whether additional coding subcategories were needed. The exhaustiveness of the coding frame was regarded as valid to the extent that the categories adequately represented the concepts in the research question, and it was not necessary to adapt the coding frame to fit the material. All subcategories were used and easy to apply with no significant overlap. In the main analysis it was found that that the coding frame based on Kaikkonen's framework provided a valid description of the material. After analysing the uses of accounting, the second main category in the content analysis of the interviews was established as the reasons for not using accounting in the context of strategic thinking. The material was first coded in order to translate all meanings in the material that were relevant to the research into the categories of a coding frame. The subcategories for this were created in a data-driven way using subsumption (Schreier 2012), a strategy for generating data-driven subcategories in an already existing main category. The coding frame was created by adding data-driven subcategories and subsuming those new subcategories into already existing subcategories if they failed to add anything new. All meanings in the material that were of interest to the research question were translated into the categories of a coding frame and this process of coding frame development was carried out with all of the data. After that the frame was revised and overlapping subcategories collapsed. This data-driven coding frame was saturated by definition, meaning that each subcategory was used at least once (in practice 6–17 times) during the analysis.

4 Interviews on managers' strategic thinking and accounting

The first set of analyses examined managers' uses of accounting. A variety of perspectives were expressed in describing the benefits of accounting in the context of strategic thinking. The following presents the main findings of the interviews, drawing on Kaikkonen's (1994) four-dimensional classification.

4.1 Construction of strategist's own world-picture

A recurrent theme in the interviews was a sense amongst interviewees that accounting contributed to the construction of strategic understanding. Sixteen interviewees highlighted the role of accounting concepts in interpreting their strategic setting, thus emphasizing the construction of the strategist's own world-picture. One manager, for example, talked about the issue in the following way:

> Numbers help you to understand things, about where are we coming from, where we are and where we are going. They concretize in a certain way, they set certain kinds of frames about what is going on. You can't do strategic planning totally without numbers.

Another respondent described the connection between accounting information and forming the strategic big picture of the business model:

> If you examine some single things, they might turn out to look unprofitable. But you have to be able to see their role in the bigger strategic picture. Without keeping some components in our offering portfolio, we might be out of the game in the long run. You just need to understand the bigger picture.

Constructing the world-picture was also addressed through the strategic resources of the company. Many respondents described accounting's role as essential in understanding the strategic resources of the company (e.g. based on its balance sheet) and therefore its capacity to expand its business and make strategic investments. Accounting was considered to play a role in forming this view and understanding the business environment. For a strategist, constructing an understanding of the dynamics of building a successful organization and one's role in that setting is essential. Taken together, these results suggest that manager's strategic thinking is context specific and accounting was found to play a role in that ongoing process of constructing the strategist's world-picture.

4.2 Analytical thinking

Accounting was found to have a role in analytical thinking contributing to a manager's analysis through the use of numbers and quantification. One director explained accounting's role in the following way:

> I think that I also have to analyse in terms of numbers what has happened and where we are going. A leader who does not analyse the figures and does not understand what they are, takes a risk. In that case the ship would sail without a steering wheel and a rudder.

This view was echoed by another informant who described the use of analysis in his decision-making:

> The more you keep digging in that information and analysing it, the more useful it is. It is so clarifying to see the idea on paper with real figures that you always try to do it. You realize that your gut feeling might be wrong, so no matter how long you have been doing something, you can quite easily get lost.

However, the role of accounting in analytical thinking was the least emphasized in the interview data, mentioned by only six interviewees. Even this result is somewhat counterintuitive considering the variety of calculative practices and analytical tools of accounting; accounting was found to play a role nevertheless. Typically in these cases the strategic setting of the respondents involved issues in manufacturing and product portfolios with significant volume and complex cost structures. In areas with less precise premises for analytical calculations (e.g. business model innovation and new strategic initiatives) it was found to be emphasized less or to appear absent.

4.3 Need for conviction

The third area, the need for conviction, formed another distinctive theme in managers' use of accounting in strategic thinking. It often referred to employing accounting to alleviate a sense of uncertainty and to convince oneself regarding the feasibility of the strategic plans at hand. Comment from an interviewee highlights the issue as follows:

> If there is a new thing [business idea], I always try to asses it in terms of money myself. You also have to see what kind of business potential you are talking about, so that you don't get too excited about too little things. That can easily happen when you get truly inspired about something. You have to understand it [a strategic idea or a business plan] yourself before you start talking about it to others.

This indicates that managers do utilize accounting to test their assumptions and to satisfy their need for conviction. Furthermore, accounting has a role when managers devote themselves to the chosen strategic choices. This was echoed by another informant, who stated the following:

> Well you try to pressure test it (by analysing the idea financially) after the idea has been invented. There it is weighed whether the idea is viable or not. And at the same time you create arguments for promoting the idea.

Using accounting to bring plausibility into the ambiguous setting of strategic thinking was prominent in the interview data. The previous quote emphasized the need for conviction in a way that leads to the last theme: the use of accounting in communication.

4.4 Communication

The fourth theme for accounting in strategic thinking was communication. Often the stories addressing this theme were about promoting the strategic ideas and communicating their value potential for decision-makers. The following quote illustrates the point:

> I would not get anything accepted by merely saying that this supports our strategy. I have to be able to demonstrate that it (a strategic development project) will be a good investment. Even strategic projects are such that at some point they add value or save costs that is more than the amount invested in development.

In a similar vein, another interviewee stated that:

> I don't know whether it is good or bad, but at least in our organization due to our financial situation, you have to be able to demonstrate a really strong business case before we go ahead with anything. For example, if you are thinking about expanding the business and proposing developmental investments for that, then you have to have a real solid examination with financial facts before you can get it approved.

In addition to the previously illustrated widespread view of using accounting in order to justify an action and receive official decisions for moving forward with strategic initiatives, interviewees highlighted a further form of communication. Accounting was used in attempts to influence the meaning construction of actors in the organization other than the official decision-makers. Based on his/her strategic view and standpoint, the strategist is understandably motivated to establish new patterns of actions in an organization, and accounting has a potential role in this communicational process. One director described the issue as follows:

> If you can dress it in the form of numbers, it will have some kind of more objective basis. Strategy is a very abstract thing so if you can make it more understandable, then it has a lot of effect in terms of implementation; people can see what you are after.

Together these results provide important insights into the use of accounting in managers' strategic thinking. The four themes describing the experienced benefits of accounting were prominent in the data. However, the results echo the previous literature by highlighting the absence of accounting (Nixon and Burns 2012;

Langfield-Smith 2008; Brandau and Hoffjan 2010; Taipaleenmäki 2014) and showing that the one conventional and often most explicit part of using accounting, analysis, was emphasized by only a few respondents. The discrepancy between the potential use of accounting and practice remains. The first analysis of the data outlined the uses of accounting where it is found to be potentially useful for the manager. On the contrary, this perspective did not bring forth any of the aspects that might discourage managers from quantifying their strategic intentions and using accounting in their strategic endeavours. To conceptualize this contrasting side of the issue, another kind of analysis of the interview data was needed. This second analysis was carried out inductively in a data-driven way without utilizing any pre-existing theoretical framework. The second main category identified in this analysis outlined the reasons for not using accounting in the context of strategic thinking. The second analysis revealed the following four factors describing the disadvantages of using accounting in strategic contexts.

4.5 Hindering a strategic mindset

The first disadvantage was "hindering a strategic mindset", and it describes the ways in which accounting was seen not to act in favour of supporting strategic thinking, but the opposite. One director stated the following:

> If you tell a CFO about a new idea, the first question is how much will this cost and how much will it generate revenue. Well, I see that it can easily kill innovations if you include the numbers in the process too early.

In a similar vein, another respondent described how the use of accounting might seem solid in itself, but that in time it can also reduce innovation efforts in an organization.

> If you have an idea and already before the decision is made whether we shall take it forward and test it, if there are very strict frames and you must calculate the internal rate of returns and everything for it, my view is that it raises the threshold for brainstorming too high.

In summary, the theme of hindering strategic mindset was often related to organizational practices that emphasized accounting in a way that led to the hamstringing of ideas and efforts regarding new strategic suggestions. This highlighted the other side of the matter, in contrast to the identified use of accounting in constructing the strategist's world-picture.

4.6 Inability to quantify future

The second disadvantage was related to analytical thinking, and more precisely to the challenges of using calculative practices in future-related strategic thinking. These limitations of using accounting were widespread in the data and offered critical views about the usefulness of accounting when looking ahead. This theme of "inability to quantify future" is aptly described by the following interviewees.

> When looking at the future, I don't really see any role for accounting information in that process. For example, we drew up our strategy in such a way that we set no numeric goals or key figures in advance, as we have traditionally done. We thought about productizations we have to make, account management we have refigure etc. and that produces certain numbers but the key goal is that we have to be better than today. The world nowadays is so complex that you can't take such a numerical standpoint that you could say that these choices will lead us to these kinds of financial outcomes.

Another informant stated the following:

> There aren't any absolute truths out there [regarding business development]. You have to know the customers, the field of industry, technology, legislation, etc., but there are always surprises which can be become noticeable through weak signals or through someone's opinions. In the planning phase if we think about doing revenue calculations, those are rather uncertain predictions before we have any real offers out sent to the customers and any closed deals. Before that, it is only our vague perception of the matter, not facts.

A common view amongst the interviewees was that accounting is limited in its capability to analyse planned strategic initiatives in order to quantify their potential outcomes in advance. This inability to quantify the future in strategic thinking was aptly described by the following respondent, who refers to the potential use of accounting merely in the later implementation stages of the process:

> It is extremely hard to set exact goals in advance. At some point along the way it starts to unfold in a way that, okay, there is a change, but that venture then it is quite far at the point when you start looking at it through real numbers.

4.7 Cautious short-sightedness

As the third disadvantage, respondents raised concerns that the use of accounting can lead to "cautious short-sightedness". In many ways, it was found to be challenging to alleviate uncertainty through quantifying future-related issues. By using accounting one can be convinced regarding issues that are more easily quantifiable, typically short-term issues with a tactical nature. In a strategic setting, looking for conviction through accounting and numbers can lead to a lack of courage at the expense of learning and going forward. One interviewee explained:

> Sometimes accounting in a strategic context limits daring and risk-taking. Sometimes you need to be able to be sure that those problems will be solved along the way. If you calculate too strongly through numbers it might be that you base your decisions too much on numbers and many steps are left untaken and many things not achieved.

Cautious short-sightedness was seen to have far-reaching consequences also on an organizational level, when it leads to refraining from strategic development actions. Many respondents described situations in which short-sighted performance reporting and measurement neglected strategic development. One interviewee described the issue, calling it “development debt”:

> When a profit unit has a goal to generate maximum profit for the shareholders, that kind of thinking leads to a situation where longer-term strategic development is carried out less than it should be, thus accumulating development debt in an organization. And if there is some man or a woman who sees retirement in a couple of years, then that is what you are tempted to do, collect all the money and leave the organization’s development debt for others to pay.

4.8 Misleading numbers

The fourth disadvantage of accounting in the context of strategic thinking was connected to human interaction and organizational change. This theme of “misleading numbers” emphasized two perspectives. One, accounting information was found to be useful in promoting strategic change only to a limited extent. The strategy itself and the convincing story, including key supporting factors for it, were more relevant for decision-making and generating change. A director described the issue as one of presentation:

> When you make long-term calculations you can say pretty much anything with them. In theatrical terms, it is a question of whether something is plausible or not, is it something that someone wants to hear or not. So in a way the other content of the strategy (other than accounting information) has to be so logical and convincing that you can think that these kinds of goals can be achieved.

Another interviewee summarized the problematics of promoting change in the following way:

> Strategic issues are sold with a story. The story is more important than numbers.

Stories around strategic initiatives were described as something that inspired and directed the strategic thinking. Often these strategic stories, instead of accounting, were seen to be operating as guidelines to legitimate and to create frames for strategic thinking along the predefined strategic direction of the company.

The second aspect of misleading numbers involved a temptation to embellish them in favour of the strategic actions one is promoting. Respondents openly described a tendency to present numbers that favour a proposed initiative. One interviewee illustrates the point:

> Typically you over-estimate the positive effects and underestimate the costs, that is very common. Probably it is typical for human beings to have overconfidence in the desired good outcomes. Often with strategic initiatives, the numbers are dressed up to be overly positive.

Another interviewee continued from the same perspective:

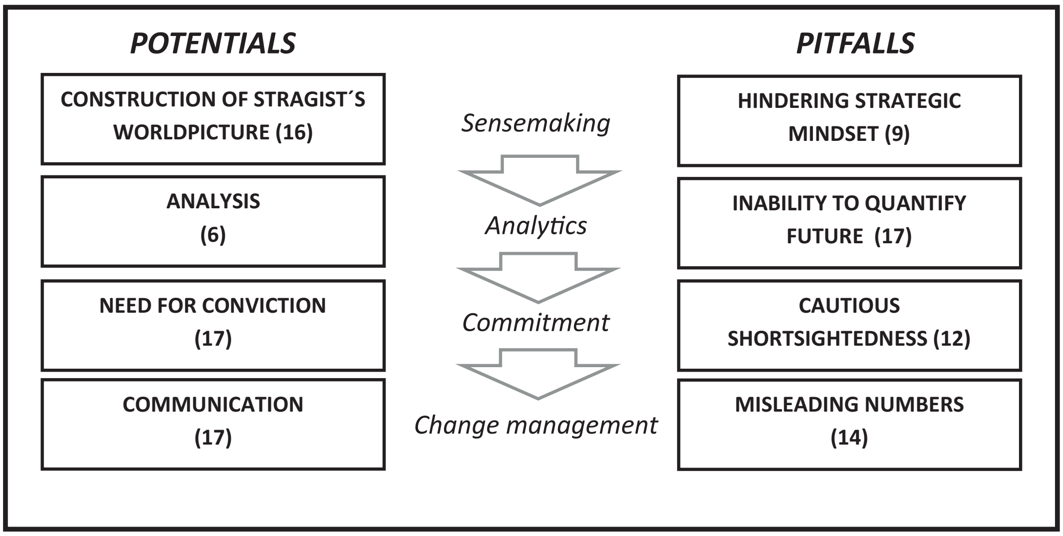
> Quite often the calculations around strategic issues have been made in a way that you can see the famous "hockey stick effect" in them. The historically proven performance has been a fairly steady growth and then the new suggested strategy is believed to take it to a completely new level. When we have analysed several strategic plans afterwards, we have found that those estimates and calculations that were originally presented had no connection to the actual outcomes. In my view, the phenomenon is about trying to justify that we are about to make a good choice.

Overall, the concerns regarding the use of accounting were widespread and as eminent in the data as the potential benefits of using accounting in the context of strategic thinking. Taken together, the results reported in this section suggest that the benefits and pitfalls form a tense, interesting role for accounting in managers' strategic thinking. The next chapter, therefore, moves on to discuss this observed duality of accounting and addresses its implications for accounting theory and research as well as management practice.

5 Conclusion and discussion

5.1 Strategic thinking and accounting: elaborating a framework

The results of this study described in the previous section can be further elaborated into a framework outlining the advantages and the disadvantages of using accounting in strategic contexts. Figure 1 presents the theorization of the results describing these potentials and pitfalls of accounting in strategic thinking on four distinct levels.



(*Note*: Numbers in brackets are frequency counts of the content analysis. They indicate how many of the 23 respondents described the theme)

Fig. 1 Potentials and pitfalls of accounting in strategic thinking

Firstly, the results of this study emphasize the *sensemaking* perspective. Earlier work has explored the approaches used to make sense of strategic issues (Tillman and Goddard 2008; Haukedal and Gronhaug 1994) and found the strategic nature of management accounting information and its usability to depend upon the mindset adopted (Hutaibat et al. 2011). Furthermore, this process has been seen as leading to differing interpretations of the competitive arena (Hodgkinson and Johnson 1994). This research extends these observations even further. Whereas accounting can be seen to be useful in constructing a strategist's world-picture, it was also found that accounting can place limitations on the strategist's mindset and prevent different business opportunities from being seen. This shifts the focus from using accounting in decision-making into seeing its role in the construction of the strategist's mindset. The results of this study highlight the importance of managers' ongoing far-reaching efforts to make sense of what occurs and how various organizational accounting practices affect this, setting frames for their strategic thinking.

Secondly, though managers found accounting useful in assisting analytical thinking, they also often found its usefulness to be heavily limited and even admitted to sometimes abandoning it when outlining strategic initiatives. One of the most provocative findings in this study was that only a few respondents described the use of accounting for *analytics* to be especially valuable for them in strategic thinking. This can be partly explained by the research design, which deliberately concentrated on individual managers and one specific aspect of strategic management, the phase where ideas and initiatives are developed. A strategy execution perspective was addressed only in the sense of arguing for generated strategic initiatives in the organization, not in focusing on the actual implementation of the developed strategic initiatives. Previous research has suggested that, for example, innovation projects become more structured and formalized as they proceed from concept development to later phases (Chiesa et al. 2009). Nevertheless, the observed lack of use of explicit analytics and accounting information in strategic thinking is surprising considering how accounting is largely based on the idea of humans' external rationality. On the other hand, this study's finding that strategic initiatives cannot be easily evaluated and analysed beforehand suggests that accounting's role should be taken note of in other dimensions of strategic thinking.

Thirdly, accounting has a role in *commitment*, when managers devote themselves to the chosen strategic choices. This study suggests that managers do utilize accounting to test their assumptions and to satisfy their need for conviction. Nevertheless, it was noted that using accounting for gaining commitment can also lead to cautious short-sightedness. While it can be argued that this is what an accounting system is supposed to do (especially from a risk management perspective), this study suggests that what accounting professionals often regard as business partnering or financial developmental sparring of strategic initiatives can actually be, at times, discouraging from a strategist's perspective. These results also resonate with Lechner and Floyd (2011), who found that exploratory and innovative strategic initiatives are less likely to succeed in the resource allocation process. Interviewees saw the use of accounting as leading to feeling convinced and being committed to the strategic development in question, but sometimes also to the opposite result—over-cautiousness and short-sightedness. This offers a significant perspective especially on the stream of previous research that has pointed to the importance of management control systems in organizations' innovation activities (Davila et al. 2009; Simons 1995, 2000; Chenhall and Moers 2015).

Fourthly, accounting is also a vehicle for *change management*. Sometimes the use of accounting in this respect was related to official corporate policies and practices where strategic initiatives must be formalized and their financials made explicit. The interaction around strategic ideas was also emphasized, which resonated with the findings of previous research proposing that accounting systems should be used as communication platforms facilitating interaction and discussion regarding strategic decisions (Heidmann et al. 2008; Simons 1995; Jansen 2015; Chapman 1998; Chenhall 2003). Strategic initiatives require many people to be involved and managers also used accounting to influence the meaning construction of various organizational actors. These results corroborate the idea of Tavakoli and Lawton (2005), who state that the more an organization has people thinking strategically, the more readily it can respond to changes in the business environment. The power of accounting as a technology of distance (Robson 1992) when influencing other audiences should not be underestimated. Whereas accounting can be considered an appropriate vehicle for communicating strategic changes, it was described almost as often as being very limited and sometimes misused in that sense.

5.2 Theoretical contribution

In addition to outlining the previously described framework of the uses and disadvantages of accounting in strategic thinking, the findings from this study contribute to the current literature in three major respects. First, this article contributes to existing research on strategic thinking, which highlights explicit business impacts by suggesting that strategic thinking should be hypothesis driven (Liedtka 1998) and emphasizes a rational approach (Bonn 2005) and analytical thinking ability (Nuntamanop et al. 2013) as part of strategic thinking. Previous literature on strategic thinking (e.g. Zabriskie and Huellmantel 1991; Heracleous 1998; Liedtka 1998; Bonn 2001, 2005; Tavakoli and Lawton 2005; Nuntamanop et al. 2013) does not, however, outline any specific ways that accounting might play a role in strategic thinking of managers. This article contributes by providing the first comprehensive description of the forms accounting can take in these enacted, localized strategic thinking contexts. In addition to exploring the uses of accounting in strategic thinking, this article contributes to the literature problematizing the role of accounting in future-oriented strategic contexts (Choudhury 1988; Taipaleenmäki 2014; Cooper et al. 2001; Whittle and Mueller 2010; Sajasalo et al. 2016) by outlining reasons for why accounting is sometimes seen to be problematic and, therefore, absent in various cases.

Second, the findings from this study highlight a perspective that often goes unnoticed: that of individual managers. This research responds to calls for accounting research on the practitioners' perspective (e.g. Chua 2007; Jönsson 1998; Gerdin et al. 2014; Hall 2010; Lövstål and Jontoft 2017) and to study control and innovation on a more specific level than that of the organization (Davila et al. 2009; Tervala et al. 2017; Chenhall and Moers 2015; Davila et al. 2009), with a focus instead on subjective mechanisms and informal systems of control (Reimer et al. 2016; Tervala et al. 2017; Martyn et al. 2016). The results suggest that, from the perspective of an individual manager, strategic thinking is much more than straightforward analytical decision-making and the role of accounting is wide-ranging. The strategic decisions in managerial work that have to be made do not exist, as such, ready to be analytically solved. It is often the strategic thinker who outlines and constructs the strategic issue by interpreting the relevant information related to that issue and thereby constructing a worldview. Accounting can, in this setting, advance the strategic thinker's ability to outline which changes are essential. Whereas accounting was found to be useful in constructing the strategist's world-picture, it was also found to have another side. The results highlight that organizational accounting practices and financial goals set frames for the individual's strategic thinking. Financial constraints in strategic actions can limit the individual's freedom for interpretation and action. Organizational factors are also influential in the interpretation of strategic issues (Kuvaas and Kaufmann 2004). Kaikkonen (1994) emphasizes the independence of strategists, their responsibility for change and how the constructions of strategists' own world-picture must be left to the individual. Although this is a justifiable way of looking at the issue from a strategist's subjective perspective, this study revealed an emphasis on the organizational management control context. The need for strategic alignment (Akroyd et al. 2016; Slagmulder 1997) of the developed initiatives emphasized by the respondents reflected the goal congruence element of management control (Malmi and Brown 2008). When promoting the suggested strategic initiatives, managers often saw accounting as a benefit in communication regardless of whether they themselves had found accounting to be valuable during the previous phases of strategic development. In organizational managerial contexts, accounting information was used to reduce uncertainty (e.g. Frishammar 2003) and people favoured plausibility over accuracy (Weick 1995).

The third area where this study provides a theoretical contribution is in our understanding of the dual nature of accounting in strategic contexts. Whereas the existing research already provides interesting findings on the interplay of rationality and intuition in decision-making (e.g. Kahneman 2011; Calabretta et al. 2017; Langley 1995) and on the various positive and negative effects of accounting (e.g. Denis et al. 2006; Nutt 1998; Frishammar 2003; Kutschera and Ryan 2009; Cooper et al. 2001; Whittle and Mueller 2010; Mastilak et al. 2012), there have been few empirical investigations into expanding the view on accounting's dual-sided nature in strategic contents. Previous studies have recognized but not sufficiently addressed the duality of accounting in the context of strategic thinking. Although the previous work offers insight and frameworks for what accounts for the interplay and tension of this duality, the perspective remains a narrow one. This study suggests that the dual nature of accounting in strategic contexts is wider than the components of making a decision (analytics and commitment), extending to the initial framing of the strategic setting in the first place (sense making) and putting the choices made into action (change management).

The duality of accounting has become more important in light of recent approaches suggesting that management control and innovation can create tensions by presenting competing demands (Lövstål and Jontoft 2017) and that these tensions could be managed by paradoxical thinking, in which both approaches to the issue are leveraged (Calabretta et al. 2017). This study suggests that in addressing accounting in strategic thinking, we should shift the focus from a contingency approach (Chapman 1997; Chenhall 2003), which asks what management should emphasize what under what conditions, to seeing accounting and control as something that embraces opposing yet interrelated forces simultaneously. Whereas the contingency approach deals with tensions by seeking a balance that favours one competing demand at the expense of another, this study suggests that it is essential to manage competing demands simultaneously. The managers interviewed in this study highlighted both sides of the issue, emphasizing that resolving the tensions related to accounting and management control in strategic contexts does not mean eliminating them, but addressing competing demands simultaneously. These findings suggest that accounting and management control present themselves as competing demands. The findings are, furthermore, in line with Lövstål and Jontoft's (2017) view on competing demands and tensions at the intersection of management control and innovation. They also explain in more detail what Simons (1995) described as "belief system control", which guides and sets frames for strategic thinking and development.

One of the most significant findings to emerge from this study was how, from the managers' perspective, the advantages and disadvantages of using accounting presented themselves in a different way. The benefits of using accounting, such as in analytically outlining proposed strategic initiatives, were explicitly outlined and their potential benefits were anticipated in organizations. The disadvantages of accounting in strategic thinking, in turn, presented themselves latently and, even surprisingly, as pitfalls during the process. These included the use accounting as leading to cautious shortsightedness, which was seen to emerge imperceptibly over the course of time. Whereas management control and accounting systems can be intentionally designed by top management to constrain as well as to enable strategic exploration, it was more often the benefits of using accounting that were expected to influence the strategic thinking process. Existing research has outlined a variety of disadvantages of accounting in strategic contexts, but the findings of this study show that, for managers, they appear in a different way than the anticipated benefits do. These results may be explained through the nature of strategic thinking, which involves learning and interaction and developing the outcome in a creative process. That creates a context where the use of predefined management control systems and accounting practices might lead to the emergence of various disadvantages.

This study suggests that the duality of accounting in strategic thinking can be approached as a paradox, stemming from cognitively and/or socially constructed polarities (Lewis 2000). For example, whereas rational use of analysis and accounting information can be an appropriate approach to avoid the flaws of fast intuitive human thinking (Langley 1995; Kahneman 2011), this study suggests that slower analytical thinking comes with its own disadvantages when applied in strategic contexts. Whereas the use of accounting creates understanding, clarity and commitment, it paradoxically can simultaneously narrow the strategic mindset and create cautious shortsightedness. These findings suggest that accounting in managers' strategic thinking is represented as a range of benefits and pitfalls, as a paradoxical duality that cannot be fully solved but the tensions of which must be confronted. This paradoxical approach assumes that any exclusive choice among opposing forces in managerial work is temporary and the tension will resurface.

5.3 Managerial implications

This study offers a number of implications for managerial work. In strategic thinking, being aware of your own perceptions is essential. Approaching accounting in strategic thinking as a paradox, as representing contradictory yet interrelated elements, offers a new perspective for management. Instead of seeing organizational tensions as a dilemma of competing choices (e.g. the freedom to innovate vs. the need for control and alignment), they should be accepted as a paradoxical duality. By applying paradoxical thinking managers can make latent opposing forces more explicit, thus creating a more powerful context for creative strategic thinking. Seeing accounting's role in strategic thinking with its all tensions and dimensions is especially important in this age, which fosters the continuous pursuit of opportunities for significant new value creation. For example, unintended consequences of accounting and management control leading to cautious short-sightedness might be especially harmful in an ever-changing business environment and with an increasing demand to emphasize continuous learning and agile experimentation. This study highlights the importance of managers seeing the entire range of benefits and pitfalls of accounting in strategic thinking. It would be remarkable to suppose that when management thinking becomes strategic, considering issues in terms of money and management control would be irrelevant and hence accounting would have no role. Leading an innovative organization is paradoxical and tensions stemming from its processes should be carefully managed (Pisano 2019). The framework outlined in this study can be used to inform strategic development activities in companies by utilizing an accounting perspective in the process.

5.4 Limitations and suggestions for further research

This research does have limitations. QCA as a method helps describe material only in those respects specified by the researcher. The method does not allow describing the full meaning of the material in each and every respect. In this study, a choice was made to examine the use and lack of use of accounting in managers' strategic thinking. This article does not offer a definite conclusion on whether managers find accounting to be useful or not overall. Rather, it offers a holistic collection of experienced potentials and pitfalls of the use of accounting in a strategic context. The formed concepts can also be interrelated, a disadvantage for one company could be an advantage to another company. This is very much dependent on the strategy being pursued. This study did not aim to cover all aspects related to strategic issues and accounting in companies. The aim was instead to investigate and study individual managers' interpretations of the situation. Such a focus excludes many significant questions related to, for example, organizational practices and general prevalence regarding management control systems, management accounting and strategy processes. Notwithstanding these limitations, this article makes a potentially important contribution towards the understanding of accounting in strategic thinking. The findings of this study are relevant to researchers looking to study accounting from the perspective of one of its most important users, managers. Studying the strategic thinking of practicing managers from an accounting perspective helps researchers move beyond the numbers to see the strategic thinking of managers as a world that is far richer and more complex than is often assumed. The focus of this research has been on building an initial theoretical framework. Future research could expand the understanding of accounting and strategic thinking by further developing and applying this study's findings with more details. Further work is needed to fully understand the situated nature of accounting and to assess more specifically those contexts in which managers value its usefulness and those in which they are wary of its disadvantages. More broadly, this study has highlighted that understanding of accounting from the perspective of practicing managers is still in need of further research. It also invites managers and accounting professionals to make connections between the outlined elements of accounting in strategic thinking and their own experience.

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Appendix A

EMBA final theses topics on strategic thinking
1. Local food as a competitive advantage for company X
2. Renewed business and contracting model securing the future of company X
3. Strategic knowledge-base of managing a municipal enterprise group
4. Account management in a small design-company—"Most wanted partner in visual communications"
5. Research on the success factors of a new product in bank Group X
6. Differentiating solutions value on customer relationship with the help of customer insight
7. Overwhelming customer experience—Concept manual for the business of the future in company X
8. Developing marketing and services to Russian customers in company X
9. Building an education value network in industry X
10. Pricing as a competitive advantage in retail. Effect of impression about the price in choosing where to buy
11. With innovations to a sustainable tomorrow—Innovation process as part of sustainable business
12. Life Cycle planning and roadmaps for existing customers in company X
13. ICT-governance and organizational architecture in organization X
14. The triple helix institute of higher education on entrepreneurship—continuous renewal and management challenges

15. From cooperation to partnership—development of suppliers relationships in company X
16. Strategy work of multi-actor organization—case organization X
17. Customer service improvement in business area X
18. Learning story about building an innovation system into enterprise X
19. Perspectives into the future of field of industry X
20. Account management in municipalities
21. Customer as a developer of products and services
22. Success factors of the future in the field of industry X
23. Hurricane—Business of a company X
24. Competitive strategy of goods trade in Company X and send-offs for successful strategy implementation
25. Local supplier of the future in company X
26. Growth strategy of sales in company X

Appendix B

Interview questions—areas of enquiry
Current work
Describe your work and area of managerial responsibility
How do you know you have done a good job?
How are accounting and financial issues related to your work?
What accounting practices you find useful/not useful in your work?
Strategic thinking
How do you plan ahead and practice strategic foresight in your work?
How can one know if some new idea or a plan might turn out to be strategically significant?
When was the last time you practiced strategic thinking?
How do you define goals for strategic development?
What is your personal view on strategic development of your business based on?
How are strategic ideas and initiatives sold and operationalized in an organization?
Do you see any dangers and challenges related to strategic thinking?
Strategy and accounting issues
What is the role of financial information in strategic thinking?
When creating and envisioning something new, what accounting frameworks and practices you consider useful/not useful?
Do you produce calculations yourself in your work? Do you utilize calculations made by others?
Do you see any challenges or dangers when using accounting in strategy work?
Is there something else you would like to tell about strategic thinking and accounting related to your work and experience?
Strategic thinking case: EMBA final thesis project
How would you describe your EMBA final thesis as a project (time span, who was involved etc.)?
How would you evaluate it now as a strategic project?
How would you estimate the financial impact of the project?
How would you describe accounting thinking and financial quantifications as part of the project?

Appendix C

Descriptive details of interviewees

	Job title	Company size[a]		Field of industry	Age	Gender
		SME	Large			
1	Production director		x	Manufacturing	45	M
2	Business director		x	Education services	46	M
3	Account director	x		Professional services	49	F
4	Senior project manager	x		Education services	46	M
5	Manager of product management	x		Technical wholesale	41	M
6	CIO		x	ICT services	43	M
7	Development director		x	Media	54	M
8	Finance manager		x	Energy	47	M
9	Production unit director	x		Food industry	55	M
10	Executive director	x		Professional services	50	F
11	Director	x		Social services	54	F
12	Director		x	Public sector	35	M
13	Sales manager		x	Food Industry	44	F
14	Director of administration		x	Public sector	53	F
15	Category manager		x	Retail	45	M
16	Account director		x	Real estate services	49	M
17	CEO	x		Travel	48	F
18	Development director		x	Finance	57	F
19	Director		x	Energy	46	F
20	Director		x	Software	46	M
21	CIO		x	Healthcare	49	M
22	Channel development manager		x	Food industry	56	M
23	Administration manager	x		Real estate services	39	F

[a]Small and medium-size enterprise (SME) definition according to European Union recommendation 2003/361, meaning organisations with less than 250 employees

References

Abraham, S. (2005). Stretching strategic thinking. *Strategy and Leadership, 33*(5), 5–12.

Adler, P. S. (2012). The sociological ambivalence of bureaucracy: From Weber via Gouldner to Marx. *Organization Science, 23,* 244–266.

Adler, P. S., & Borys, B. (1996). Two types of bureaucracy: Enabling and coercive. *Administrative Science Quarterly, 41,* 61–89.

Ahrens, T., & Chapman, C. S. (2004). Accounting for flexibility and efficiency: A field study of management control systems in a restaurant chain. *Contemporary Accounting Research, 21,* 271–301.

Akroyd, C., Biswas, S. S. N., & Chuang, S. (2016). How management control practices enable strategic alignment during the product development process. In M. J. Epstein & M. A. Malina (Eds.), *Advances in management accounting* (Vol. 26, pp. 99–138). Bingley: Emerald Group Publishing Limited.

Anthony, R. N. (1965). *Planning and control systems: A framework for analysis*. Cambridge: Division of Research, Graduate School of Business Administration, Harvard University.
Benito-Ostolaza, J. M., & Sanchis-Llopis, J. A. (2014). Training strategic thinking: Experimental evidence. *Journal of Business Research, 67,* 785–789.
Bisbe, J., & Malagueno, R. (2009). The choice of interactive control systems under different innovation management modes. *European Accounting Review, 18,* 371–405.
Bisbe, J., & Otley, D. (2004). The effects of interactive use of management control systems on product innovation. *Accounting, Organizations and Society, 29,* 709–737.
Bonn, I. (2001). Developing strategic thinking as a core competency. *Management Decision, 39,* 63–71.
Bonn, I. (2005). Improving strategic thinking: A multilevel approach. *Leadership & Organization Development Journal, 26,* 336–354.
Brandau, M., & Hoffjan, A. H. (2010). Exploring the involvement of management accounting in strategic decisions and control: The case of offshoring. *Journal of Accounting & Organizational Change, 6,* 72–95.
Brouthers, K. D., & Roozen, F. A. (1999). Is it time to start thinking about strategic accounting? *Long Range Planning, 32,* 311–322.
Burkert, M., Fischer, F. M., & Schäffer, U. (2011). Application of the controllability principle and managerial performance: The role of perceptions. *Management Accounting Research, 22,* 143–159.
Busch, T. (1997). Management, accounting and cognition. *Scandinavian Journal of Management, 13,* 39–49.
Calabretta, G., Gemser, G., & Wijnberg, N. M. (2017). The interplay between intuition and rationality in strategic decision making: A paradox perspective. *Organization Studies, 38,* 365–401.
Casey, A. J., & Goldman, E. F. (2010). Enhancing the ability to think strategically: A learning model. *Management Learning, 41,* 167–185.
Chapman, C. S. (1997). Reflections on a contingent view of accounting. *Accounting, Organizations and Society, 22,* 189–205.
Chapman, C. S. (1998). Accountants in organizational networks. *Accounting, Organizations and Society, 23,* 737–766.
Chenhall, R. H. (2003). Management control systems design within its organizational context: Findings from contingency-based research and directions for the future. *Accounting, Organizations and Society, 28,* 127–168.
Chenhall, R. H., & Moers, F. (2015). The role of innovation in the evolution of management accounting and its integration into management control. *Accounting, Organizations and Society, 47,* 1–72.
Chiesa, V., Federico, F., Lucio, L., & Giuliano, N. (2009). Exploring management control in radical innovation projects. *European Journal of Innovation Management, 12,* 416–443.
Choudhury, N. (1988). The seeking of accounting where it is not: Towards a theory of non-accounting in organizational settings. *Accounting, Organizations and Society, 13,* 549–557.
Chua, W. F. (2007). Accounting, measuring, reporting and strategizing—Re-using verbs: A review essay. *Accounting, Organizations and Society, 32,* 487–494.
Cinquini, L., & Tenucci, A. (2010). Strategic management accounting and business strategy: A loose coupling? *Journal of Accounting & Organizational Change, 6,* 228–259.
Cooper, S., Crowther, T., & Carter, C. (2001). Challenging the predictive ability of accounting techniques in modelling organizational futures. *Management Decision, 39,* 137–146.
Davila, T. (2000). An empirical study on the drivers of management control systems´ design in new product development. *Accounting, Organizations and Society, 25,* 383–409.
Davila, A., Foster, G., & Oyon, D. (2009). Accounting and control, entrepreneurship and innovation: Venturing into new research opportunities. *European Accounting Review, 18,* 281–311.
Denis, J.-L., Langley, A., & Rouleau, L. (2006). The power of numbers in strategizing. *Strategic Organization, 4,* 349–377.
Ditillo, A. (2012). Designing management control systems to foster knowledge transfer in knowledge-intensive firms: A network-based approach. *European Accounting Review, 21,* 425–450.
Dragoni, L., Oh, I., Vankatwyk, P., & Tesluk, P.-E. (2011). Developing executive leaders: The relative contribution of cognitive ability, personality, and the accumulation of work experience in predicting strategic thinking competency. *Personnel Psychology, 65,* 829–864.
Duhamel, F., Reboud, S., & Santi, M. (2014). Capturing value from innovations: The importance of rent configurations. *Management Decision, 52,* 122–143.

Duriau, V. J., Reger, R. K., & Pfarrer, M. D. (2007). A content analysis of the content analysis literature in organisational studies: Research themes, data sources, and methodological refinements. *Organizational Research Methods, 10,* 5–34.

Dutton, J. E., Ashford, S. J., O'Neill, R. M., & Lawrence, K. A. (2001). Moves that matter: Issue selling and organizational change. *Academy of Management Journal, 33,* 716–736.

Feeney, O., & Pierce, B. (2016). Strong structuration theory and accounting information: An empirical study. *Accounting, Auditing & Accountability Journal, 29,* 1152–1176.

Frishammar, J. (2003). Information use in strategic decision making. *Management Decision, 41,* 318–326.

Gerdin, J., Messner, M., & Mouritsen, J. (2014). On the significance of accounting for managerial work. *Scandinavian Journal of Management, 30,* 389–394.

Goldman, E. F. (2005). *Becoming an expert strategic thinker: The learning journey of healthcare CEOs*. UMI dissertations publishing, George Washington University.

Goldman, E. F. (2012). Leadership practices that encourage strategic thinking. *Journal of Strategy and Management, 5,* 25–40.

Goretzki, L. (2013). Management accounting and the construction of the legitimate manager. *Journal of Management Control, 23,* 319–344.

Graetz, F. (2002). Strategic thinking versus strategic planning: towards understanding the complementaries. *Management Decision, 40,* 456–462.

Hall, M. (2010). Accounting information and managerial work. *Accounting, Organisations and Society, 35,* 301–315.

Haukedal, W., & Gronhaug, K. (1994). Context-specific rationality in sense-making of strategic stimuli. *Scandinavian Journal of Management, 10,* 355–367.

Heidmann, M., Schäffer, U., & Strahringer, S. (2008). Exploring the role of management accounting systems in strategic sensemaking. *Information Systems Management, 25,* 244–257.

Heracleous, L. (1998). Strategic thinking or strategic planning. *Long Range Planning, 31,* 481–487.

Hodgkinson, G. P., & Johnson, G. (1994). Exploring the mental processes of competitive strategists: The case for a processual approach. *Journal of Management Studies, 31,* 525–551.

Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research, 15,* 1277–1288.

Hutaibat, K., Alberti-Alhtaybat, L., & Al-Htaybat, K. (2011). Strategic management accounting and the strategising mindset in an English higher education institutional context. *Journal of Accounting & Organizational Change, 7,* 358–390.

Jansen, P. E. (2015). Participation, accounting and learning how to implement a new vision. *Management Accounting Research, 29,* 45–60.

Jönsson, J. (1998). Relate management accounting research to managerial work! *Accounting, Organisations and Society, 23,* 411–434.

Jordan, S., & Messner, M. (2012). Enabling control and problem of incomplete performance indicators. *Accounting, Organizations and Society, 37,* 544–564.

Jorgensen, B., & Messner, M. (2010). Accounting and strategizing: A case study from new product development. *Accounting, Organizations and Society, 25,* 184–204.

Kahneman, D. (2011). *Thinking, fast and slow*. New York: Allan Lane.

Kaikkonen, V. (1994). *Ihminen, strategia-ajattelu ja laskentatoimi* (Vol. 420)., Acta Universitatis Tamperesis ser A Tampere: University of Tampere.

Kaplan, R. S., & Norton, D. P. (1996). *The balanced scorecard: Translating strategy into action*. Boston: Harvard Business Press.

Kaplan, R. S., & Norton, D. P. (2004). *Strategy maps: Converting intangible assets into tangible outcomes*. Boston: Harvard Business Press.

Kast, F. E., & Rosenzweig, J. E. (1970). *Organization and management: A systems approach*. New York: McGraw-Hill.

Kaufman, R., Oakley-Brown, H., Watkins, R., & Leigh, D. (2003). *Strategic planning for success: Aligning people, performance and payoffs*. San Francisco: Pfeiffer.

Kutschera, I., & Ryan, M. (2009). Implications of intuition for strategic thinking: practical recommendations for gut thinkers. *S.A.M. Advanced Management Journal, 74,* 12–20.

Kuvaas, B., & Kaufmann, G. (2004). Individual and organizational antecedents to strategic-issue interpretation. *Scandinavian Journal of Management, 20,* 245–275.

Laamanen, T. (2017). Reflecting on the past 50 years of Long Range Planning and a research agenda for the next 50. *Long Range Planning, 50,* 1–7.

Langfield-Smith, K. (2008). Strategic management accounting: How far have we come in 25 years? *Accounting, Auditing & Accountability Journal, 21,* 204–228.
Langley, A. (1989). In search of rationality: The purposes behind the use of formal analysis in organizations. *Administrative Science Quarterly, 34,* 598–631.
Langley, A. (1995). Between “Paralysis by Analysis” and “Extinction by Instinct”. *Sloan Management Review, 36,* 63–76.
Lechner, C., & Floyd, S. W. (2011). Group influence activities and the performance of strategic activities. *Strategic Management Journal, 33,* 478–495.
Lewis, M. W. (2000). Exploring paradox: Toward a more comprehensive guide. *Academy of Management Review, 4,* 760–776.
Liedtka, J. M. (1998). Strategic thinking: Can it be taught? *Long Range Planning, 31,* 120–129.
Lövstål, E., & Jontoft, A. (2017). Tensions at the intersection of management control and innovation: A literature review. *Journal of Management Control, 28,* 41–79.
Malmi, T., & Brown, D. A. (2008). Management control systems as a package—Opportunities, challenges and research directions. *Management Accounting Research, 19,* 287–300.
Martyn, P., Sweeney, B., & Curtis, E. (2016). Strategy and control: 25 years of empirical use of simons’ levers of control framework. *Journal of Accounting & Organizational Change, 12,* 281–324.
Mastilak, C., Matuszewski, L., Miller, F., & Woods, A. (2012). Evaluating conflicting performance on driver and outcome measures: the effect of strategy maps. *Journal of Management Control, 23,* 97–114.
Miller, P., & Power, M. (2013). Accounting, organizing, and economizing: Connecting accounting research and organization theory. *The Academy of Management Annals, 7,* 557–605.
Mintzberg, H. (1994). *The rise and fall of strategic planning*. New York: Prentice-Hall.
Moon, B. (2013). Antecedents and outcomes of strategic thinking. *Journal of Business Research, 66,* 1698–1708.
Mouritsen, J., Hansen, A., & Hansen, C. O. (2009). Short and long translations: Management accounting calculations and innovation management. *Accounting, Organizations and Society, 34,* 738–754.
Mueller, C., Mone, M. A., & Barker, V. L., III. (2007). Formal strategic analyses and organizational performance: Decomposing the rational model. *Organization Studies, 28,* 853–883.
Näsi, J. (1991). Strategic thinking as doctrine, development of focus areas and new insight. In J. Näsi (Ed.), *Arenas of strategic thinking*. Foundation of Economic Education: Helsinki.
Nixon, B. (1998). Research and development performance measurement: A case study. *Management Accounting Research, 9,* 329–355.
Nixon, B., & Burns, J. (2012). The paradox of strategic management accounting. *Management Accounting Research, 23,* 229–244.
Nordqvist, M., & Melin, L. (2008). Strategic planning champions: Social craftpersons, artful interpreters and known strangers. *Long Range Planning, 41,* 326–344.
Nuntamanop, P., Kauranen, I., & Igel, B. (2013). A new model of strategic thinking competency. *Journal of Strategy and Management, 6,* 242–264.
Nutt, P. C. (1998). How decision makers evaluate alternatives and the influence of complexity. *Management Science, 44,* 1148–1166.
Nyamori, R. O., Perera, M. H. P., & Lawrence, S. R. (2001). The concept of strategic change for management accounting research. *Journal of Accounting Literature, 20,* 62–83.
Otley, D. (1994). Management control in contemporary organizations: Towards a wider framework. *Management Accounting Research, 5,* 289–299.
Pärl, Ü. (2014). The role of dialogue between executives and ground-level employees mediated by MACS. *Baltic Journal of Management, 9,* 189–212.
Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
Pfister, J. A., Jack, S., & Darwin, S. N. (2017). Strategizing open innovation: How middle managers work with performance indicators. *Scandinavian Journal of Management, 33,* 139–150.
Pisano, G. (2019). The hard truth about innovative cultures. *Harvard Business Review, 97,* 62–71.
Porter, T. M. (1995). *Trust in numbers: The pursuit of objectivity in science and public life*. Princeton, NJ: Princeton University Press.
Puhakka, H. (2017). The role of accounting in making sense of post-acquisition integration. *Scandinavian Journal of Management, 33,* 12–22.
Reimer, M., Van Doorn, S., & Heyden, M. L. M. (2016). Managers and the management control systems in the strategy process. *Journal of Management Control, 27,* 121–127.
Revellino, S., & Mouritsen, J. (2015). Accounting as an engine: The performativity of calculative practices and the dynamics of innovation. *Management Accounting Research, 28,* 31–49.

Robson, K. (1992). Accounting numbers as "inscription": Action at a distance and the development of accounting. *Accounting, Organizations and Society, 17,* 685–708.
Roslender, R., & Hart, S. J. (2003). In search of strategic management accounting. *Management Accounting Research, 14,* 255–279.
Sajasalo, P., Auvinen, T., Takala, T., Järvenpää, M., & Sintonen, T. (2016). Strategy implementation as fantasising—Becoming the leading bank. *Accounting and Business Research, 46,* 303–325.
Schreier, M. (2012). *Qualitative content analysis in practice*. Thousand Oaks: Sage Publications Limited.
Schreier, M. (2014). Qualitative content analysis. In U. Flick (Ed.), *The SAGE handbook of qualitative data analysis*. London: Sage Publications Ltd.
Simons, R. (1995). *Levers of control: How managers use innovative control systems to drive strategic renewal*. Boston, MA: Harvard Business School Press.
Simons, R. (2000). *Performance measurement and control systems for implementing strategy: Text and cases*. Upper Saddle River, NJ: Prentice Hall.
Slagmulder, R. (1997). Using management control systems to achieve alignment between strategic investment decisions and strategy. *Management Accounting Research, 8,* 103–139.
Sloan, J. (2014). *Learning to think strategically*. Oxford: Elsevier.
Smith, W. K., & Lewis, M. W. (2011). Toward a theory of paradox: A dynamic equilibrium model of organizing. *Academy of Management Review, 36,* 381–403.
Stacey, R. (1992). *Managing the unknowable: strategic boundaries between order and chaos in organizations*. San Francisco: Jossey-Bass Wiley Company.
Steptoe-Warren, G., Howat, D., & Hume, I. (2011). Strategic thinking and decision making: Literature review. *Journal of Strategy and Management, 4,* 238–250.
Strauß, E., & Zecher, C. (2013). Management control systems: A review. *Journal of Management Control, 23,* 233–268.
Taipaleenmäki, J. (2014). Absence and variant modes of presence of management accounting in new product development—Theoretical refinement and some empirical evidence. *European Accounting Review, 23,* 291–334.
Tavakoli, I., & Lawton, J. (2005). Strategic thinking and knowledge management. *Handbook of Business Strategy, 6,* 155–160.
Tayles, M., Pike, R., & Sofian, S. (2007). Intellectual capital, management accounting practices and corporate performance. *Accounting, Auditing and Accountability Journal, 20,* 522–548.
Tervala, E., Laine, T., Korhonen, T., & Suomala, P. (2017). The role of financial control in new product development: empirical insights into project managers' experiences. *Journal of Management Control, 28,* 81–106.
Tillman, K., & Goddard, A. (2008). Strategic management accounting and sense-making in a multinational company. *Management Accounting Research, 19,* 80–102.
Weber, R. (1990). *Basic content analysis*. Thousand Oaks, CA: Sage Publications.
Weick, K. E. (1995). *Sensemaking in organizations*. Thousand Oaks, CA: Sage Publications.
Whittle, A., & Mueller, F. (2010). Strategy, enrollment and accounting: the politics of strategic ideas. *Accounting, Auditing and Accountability Journal, 23,* 626–646.
Zabriskie, N. B., & Huellmantel, A. B. (1991). Developing strategic thinking in senior management. *Long Range Planning, 24,* 25–32.

III

INVESTING IN STRATEGIC DEVELOPMENT: MANAGEMENT CONTROL OF BUSINESS MODEL AND MANAGERIAL INNOVATIONS

by

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Investing in strategic development: Management control of business model and managerial innovations

Abstract

Purpose

The study explores management control in the strategic development of business model and managerial innovations. The issue is approached from the perspective of managerial work, aiming to outline what managers consider as essential elements of management control in these often iterative and learning-intensive developmental activities.

Design

The study is based on the views of 20 managers engaged in strategic development and its control in various organisations. The interview data consist of the respondents' experiences and project cases involving non-technological innovations. Qualitative content analysis (QCA) is used to identify three key concepts of management control of business model and managerial innovations.

Findings

The findings suggest that, with managerial and business model innovation, appropriate management control could be established by: (1) aligning the innovation being developed with the strategic story of the organisation, (2) leveraging co-creational projects, and (3) experimentation with close customer contact.

Research limitations/implications

The focus of this qualitative research is on building an initial framework. Future research could expand our understanding of managerial work and accounting by examining this study's outcomes in more practical detail in various contexts.

Practical implications

The findings of this study lead managers and researchers to consider management control of non-technological innovations as an enabling system supporting successful innovations.

Originality/value

This study adds a unique perspective to the literature by conceptualizing and offering managerial implications for management control in the context of strategic development of non-technological innovations.

Keywords: Management control, innovations, managerial work, business model innovation, managerial innovation, non-technological innovation, strategic development

Article Type: Research paper

Contents

1 Introduction

This study explores management control in the strategic development of business model and managerial innovations. Interplay of management accounting and innovation, has been identified as being insufficiently understood by various researchers (Chenhall and Moers 2015, Moll 2015, Nixon 1998, Bisbe and Otley 2004, Davila and Foster 2009). Previous research has pointed to the importance of management control systems in organisations' innovation activities (Davila et al. 2009, Simons 1995, Simons 2000, Chenhall and Moers 2015) and how they generate dynamic tensions, often between different types of innovations (Bedford 2015, Henri 2006, Curtis and Sweeney 2017). The initial phase where innovative ideas are generated and argued for has received a considerable amount of attention in previous research (Heidmann et al. 2008, Lechner and Floyd 2011, Birkinshaw 1997, Dutton et al. 2001, Whittle and Muller 2010). The strategic alignment of development with corporate strategy has also been examined (Akroyd et al. 2016, Slagmulder 1997). However, there is still a lack of knowledge about innovation as managed and controlled processes related to company practices (Fried et al. 2017, Pesämaa 2017). This research addresses a perspective that often goes unnoticed: management control in the strategic development of business model and managerial innovations.

Prior research on innovations and management control has mainly concentrated on new product development (e.g. Duhamel et al. 2014; Taipaleenmäki 2014; Jorgensen and Messner 2010; Davila 2000; Nixon 1998). There remains both a conceptual and empirical deficit in the study of management and management control of other types of innovations. This research takes strategic development processes as a level of analysis (as suggested by e.g. Davila et al. 2009, Chenhall and Moers 2015) and responds to requests to study subjective mechanisms and informal systems of control (Jansen et al. 2006, Reimer et al. 2016, Tervala et al. 2017, Martyn et al. 2016) and to further our knowledge of innovation processes (Fried et al. 2017, Pesämaa 2017) beyond technological ones (Damanpour and Aravind 2011).

The generation and implementation of non-technological innovations is not as structured as technological innovations, and their value is hard to evaluate even after they have been adopted (Birkinshaw and Moll 2006, Teece 2010). Yet this is exactly why further understanding about the management control of such innovations and their development is needed. In their review of management accounting and management control innovations Zawawi and Hoque (2010) conclude that existing research has focused mainly on design and implementation of management concepts such as balanced scorecard (Johansson et al 2006) and activity-based costing (Innes et al 2009),. Typically, the focus in such projects is on implementing operating models with largely predefined features. This study, in turn, presents a unique case by exploring management control in the strategic development of non-technological innovations. These are innovative initiatives with a business focus aiming to add customer value, where the outcome is developed in a creative process. The focus of this research is on the strategic development of innovations, and the management control of such creative strategic work. The research question of this study is as follows: What do experienced managers consider essential elements of management control in the strategic development of non-technological innovations?

In this study, non-technological innovations consist of managerial innovation (Birkinshaw et al. 2008, Birkinshaw and Moll 2009, Damanpour and Aravind 2011) and business model innovation (Chesbrough 2007, Teece 2010, Markides 2005, Zott and Amit 2010, Zott et al. 2011). The issue is approached from a managerial work perspective, building on the experiences of 20 managers who have designed and implemented non-technological innovations in various organisations. Based on their views, a more profound understanding is developed on the control of development of the organisation's operating and business models.

The results of this paper illuminate the dynamic and interactive nature of the ongoing strategic development of non-technological innovations. The results are conceptualised by utilising, and therefore contributing to, Simons' (1995) levels of control framework and Mouritsen and Kreiner's (2016) promissory economy concepts of accounting and control. The management control of non-technological innovations is found to involve various ways of learning, interaction and control of projects in the making. A three-fold framework with practical relevance and theoretical contributions for management control of non-technological innovations is inductively formed through qualitative content analysis of the data.

The paper has the following structure: Section 2 reviews the relevant literature related to the paper. Section 3 describes the empirical setting and methodological choices of the study. Section 4 reports the results. Section 5 elaborates on the study's theoretical contribution and managerial implications as well as addresses its limitations.

2 Literature review

2.1 Strategic development and innovations

This study adopts a broad overall definition of innovation from Davila et al. (2009), seeing it as a pursuit of opportunities for significant new value creation. Strategic development is defined in this study as processes and tasks aiming at strategically developing an organisation, as well as its products and activities. These definitions of strategic development and innovation bring them close to each other as somewhat parallel concepts. However, the term *strategic development* gives appropriate emphasis to the chosen management-driven focus area of this study: the deliberate development work needed to generate and implement innovations. The aim is to explore management control in these often iterative and learning-intensive developmental activities. The following three elements, which build on Bonn's (2005) definition, outline what the characteristics of *strategic* are in this study and how they are used as a framework for data selection. First, a holistic understanding of the organisational context (Bonn 2001, 2005) is emphasised to highlight a systems perspective, a mental model of 'how the world works' (Liedtka 1998). Second, a visionary, proactive and ambitious perspective (Bonn 2001, 2005) is included, suggesting that strategic thinking is fundamentally about developing new ideas (Stacey 1992). Third, an innovative, business-focused approach to adding customer value (Bonn 2001) is included. The market orientation is also highlighted by Moon (2013) and Abraham (2005), who describe strategic thinking as finding alternative strategies and business models to create customer value.

Whereas the definition and characteristics of *strategic* are essential in defining strategic development, they do not say enough about the *development* emphasis in the concept. The multidimensionality of this developmental aspect is defined extensively and aptly in innovation research. Characterisations of innovations are used to define specific forms of strategic development examined in this study. First, regarding strategic development, innovations have been framed according to their level of radicalness. Various researchers (e.g. Jansen et al. 2006, March 1991) have categorised innovations as being either explorative or exploitative by nature. Explorative innovation typically pursues new knowledge, products and services for new customers; that is, it consists of exploring new possibilities. Exploitative innovation, in turn, concentrates on developing and extending an existing business, that is to say, exploiting existing continuities. The criterion of the degree of newness can also be referred to as incremental or radical.

Besides being incremental or radical, innovations have been categorised on the basis of their technological emphasis and target. Product innovation is considered to be market driven and to include innovation of new products, whereas process innovation introduces new elements to production and operations, often with an efficiency-driven internal focus (Damanpour and Gopalakrishnan 2001). In addition to technologically focused product and process innovation, OECD (2005) has, for research purposes, also defined marketing innovation and organisational innovation as innovation categories. Innovation has often been approached as introduction of new goods or new methods of production and innovation research has largely focused on these technological types of innovation in the manufacturing sector.

Both product and process innovations are often technical in nature, whereas organisational innovation deals with people, re-shaping a firm's procedures and managerial activities (Lopez-Valeiras et al. 2016, Camison and Villar-Lopez 2014). Birkinshaw and Mol (2009) define management innovation as the introduction of management practices that are new to the firm and intended to enhance firm performance. Common to various definitions of managerial innovation in the existing literature is that they focus on an organisation's management processes and structures, constituting the rules and routines by which work is done in organisations. Damanpour and Aravind (2011) have reviewed definitions of administrative, organisational and management innovations, and they conclude that the areas overlap significantly. They view managerial innovation holistically, combining managerial, organizational and administrative aspects under the term.

Non-technological innovation can also assume other forms. The need to describe the problematics and the design of a business and its architecture is continually increasing. Business model innovation has been seen to be especially valuable as the business environment grows more complex and simple models of producing goods and selling them become insufficient. Business model innovation is considered essential in describing how companies create, deliver and capture value from their product innovations (Chesbrough 2010). Yet it can also be seen as a subject of innovation in itself (Zott et al. 2011). A successful business model has to be more innovative and unique than merely a logical way of doing business (Teece

2010). In its radical form, business model innovation can be as disruptive as innovative technologies and transform the existing market. However, it can also proceed more subtly, in an incremental way, when a company strategically hones its operations and ways of doing business. Typically, a business model concept explores what a company does as well also how it does it.

In sum, key concepts defined in this section form a theoretical frame for empirical data gathering and analysis in this research aiming is to explore management control in strategic development of non-technological innovations. Bonn's (2005) three-fold definition of *strategic* (holistic, visionary, and innovative) is used in this research as a lens for data selection, offering the opportunity to examine business-focused strategic development activities and their management control. The data are analysed in terms of non-technological innovations, utilizing managerial innovation and business model innovation as key concepts. Within the previously defined scope of strategic, this study adopts Damanpour and Aravind's (2011) definition of *managerial innovation*, which combines managerial, organisational and administrative aspects. They define managerial innovation as new approaches to knowledge for performing the work of management and new processes that produce changes in an organisation's strategy, structure, administrative procedures and systems. In this research, the term *business model innovation* is defined in terms of non-technological innovation that alters the way an organisation creates and captures value (Chesbrough 2007, Teece 2010, Markides 2005, Zott and Amit 2010, Zott et al. 2011). Managerial and business model innovation are partially parallel concepts in a sense that both are introduced to improve organizational performance. However, the distinction of the concepts is that whereas managerial innovation focuses on the work of management, the concept of business model innovation concentrates on the business activities of an organisation. Building on these definitions, the following section addresses the existing literature on management control in the context of innovations.

2.2 Management control of innovations

Anthony defines management control (1965, cited in Langfield-Smith 1997) as 'the process of assuring that resources are obtained and used effectively and efficiently in the accomplishment of the organisation's objectives'. The traditional view of management control has seen it as a tool for the implementation and control of pre-assigned goals in order to reduce variation.

Simons' (1995, 2000) levers of control provided a new perspective, which introduced four key constructs (belief systems, boundary systems, interactive control systems, diagnostic control systems) for management control. According to Simons (1995), the use of each construct (i.e. each lever) has different implications. Belief systems that communicate the mission, vision and values of a business are aimed to inspire and direct towards new opportunities. Boundary systems represent a statement of what the company is not going to do, therefore setting limits on innovation activities and opportunity seeking. Diagnostic control systems monitor performance against set targets and focus on feedback control. In Simons' (1995) model, the interactive use of controls was aimed at stimulating learning and exploring the strategic uncertainties needed for innovation.

Davila, Foster and Oyon (2009) have reviewed the development of research on levers of control with an emphasis on the positive role of accounting and control in innovation. They concluded that the research field has inherited the whole organisation as the unit of analysis from the traditional literature on control. They consider this to be an overly aggregate level that provides only limited understanding, and they call for more research on the level of strategic development processes. Because Simons' (1995, 2000) control framework focuses on formal controls, calls for more research into the subjective mechanisms and informal systems of control have been made by various researchers (Jansen et al. 2006, Reimer et al. 2016, Martyn et al. 2016). Furthermore, Chenhall and Moers (2015) note that the existing research has concentrated mainly on the technological procedures and administrative structures related to innovation on an organisational level.

Davila and Foster (2009) have outlined management control and innovations, favouring the innovation process as the appropriate unit of analysis. They formed four quadrants of innovation based on the type and source of innovation, categorising innovations according to their impact on strategy (incremental/radical) and the source of innovation (top management/rest of the organisation). The current study focuses on management-driven innovations. In that respect, Davila et al. (2009) outline two categories of innovation and control types that are typical in these settings. Incremental innovation from top management is seen to foster efficient execution at the expense of experimentation. In this setting, control is characterised as a diagnostic system. Radical innovation by top management, in turn, is seen as strategic innovation, where Davila et al. (2009) suggest interactive systems for reviewing the existing business model. However, this general approach does not provide much guidance into how to control the often iterative and experimental ongoing development work of non-technological innovation.

Management models of development work are undergoing a paradigm change. Strategic development is characterised by more multidimensional developmental activities than simply comparing results against originally set objectives. The well-established stage-gate model (Cooper 1990) widely used in product innovation projects divides the development process into predetermined stages with specified deliverables. Instead of clear quality control gates following each work stage, more flexible management control has been suggested. Stage-gate controls have been criticised for restricting learning and reducing project flexibility (Sethi and Iqbal 2008). The value of traditional management control and making detailed plans when everybody knows they will be revised anyway has been questioned (Anthony et al. 2014). It has been suggested that firms should pursue a balance between 'firmness and flexibility' (Tatikonda and Rosenthal 2000). Gaining impetus from the criticism of the stage-gate model, agile methodologies fostering flexibility, collaboration and customer focus have increased in popularity. Agile development has spread from software development to potentially transforming all developmental and innovation activities (Beck et al. 2001, Denning 2016, Rigby et al. 2016). Agile development is a parallel trend with open innovation (Gassmann et al. 2010) in fostering more interactive development processes. Open innovation highlights the idea that the business model of an organization should be based on harnessing collective creativity as well as on leveraging stakeholders and networks outside of the organization (Chesbrough 2006, Chesbrough and Appleyard 2007).

Some work on management control in the development of innovations does exist. Rezania et al. (2016) validated the existence of levers of control and the interrelatedness of different lever frameworks in general through a survey of project managers. Chiesa et al. (2009) studied product innovation projects and observed that the radicalness of the innovation project drives the diversity of its management control systems due to increased uncertainty, especially in the early stage of the process. In addition, Ylinen and Gullkvist (2012, 2014) studied a variety of innovation projects, stating that combined use of controls enhances the performance of innovation projects. Lopez-Valeiras et al. (2016) studied management control systems in process and organisational innovation, exploring the interactive use of cost accounting, balanced scorecard and budget systems. As Tervala et al. (2017) state, previous research has mainly focused on exploring control issues within formal project models. Less is known about the requirements for control outside of the formal innovation models. The aim of this study is to approach this from the managerial perspective on the ongoing strategic development work level.

This study adopts Simons' (1995, 2000) levers of control framework for building its contribution and theorizing the qualitative data. Despite the findings in previous research that critique Simons' framework for taking the whole organization as a unit of analysis (Davila et al. 2009) and for focusing on formal project models (e.g. Rezania et al. 2016, Chiesa et al. 2009), the framework does offer potential for theorizing management control in the context of strategic development of non-technological innovation. It presents a comprehensive framework for exploring how different management control concepts could work in combination in formulation of emergent strategic innovations. In these future-oriented developmental initiatives, the outcomes are created in a creative process and the characteristics of the final outcome are initially unknown. Therefore, this research utilizes a broader theoretical approach by supplementing Simons' (1995, 2000) view by Mouritsen and Kreiner's (2016) considerations of 'promissory economy', which outlines control and the role of accounting in future-oriented development setting in an essential way. Mouritsen and Kreiner (2016) see accounting not only as a process leading to a decision, but also in relation to the effects of decisions. They approach decisions as promises that produce new problems and decisions. This perspective shifts attention from what happens before decisions to what happens after decisions are made and development work is in progress. In this 'promissory economy' described by Mouritsen and Kreiner (2016), the role of accounting (and management control) is to enable promising. As things progress and the world changes, this requires forgetting (to enable learning) and forgiving (allowing one to review commitments). From the point of view of strategic development of innovations, Mouritsen and Kreiner's perspective on accounting and control is pivotal in adding this temporal dimension to decision-making. Yet it is partly incomplete because it does not say much about the ways in which managers engage with the unfolding world. This paper seeks to explore this 'mechanism of getting forward', as suggested by Mouritsen and Kreiner (2016), by theorizing the experiences of managers from various organizations in the light of Simon's (1995, 2000) levers of control framework. To the best of the author's knowledge, this present study is unique in its aim to explore management control in the strategic development of non-technological innovations.

3 Methodology and empirical setting

The aim of this interpretative qualitative research was to explore what experienced managers consider essential elements of management control in the strategic development of non-technological innovations. This chosen perspective was pursued by examining the experiences of managers from a variety of organizations through semi-structured interviews. Although interviewing, for example, accounting professionals would have provided a more specialized view on control concepts and their use in organizations, it was the practising managers' perspective that this research was after rather than that of accounting professionals. In addition, whereas collecting data from different actors in addition to managers around management control would offer more in-depth organizational understanding, this study aimed for managerial perspective. The goal was to outline the issue providing more comprehensive and versatile views than a single case study setting and in turn, a more profound and interactive data gathering process than, for example, surveys. Therefore, the main data were collected by interviewing managers with extensive experience in designing and carrying out strategic development in their work and therefore the ability to contribute to the set research question.

Access to this kind of original data was enabled through an executive MBA programme, whose graduates proved able to share their experiences and views openly and extensively. The main data consist of interviews with 20 managers, all graduates from the executive MBA programme. Because the aim was to explore management control in the strategic development of innovations, the respondents were selected from among all graduates using the three-fold lens derived from the theory (see section 2.1). This ensured respondents had familiarity and real-life experience with the goal of the study and could contribute to conceptualizing management control of strategic development.

The respondents were selected from among a total of 108 EMBA graduates between March 2011 and March 2014. The interviews aimed to gain insight from individuals whose current managerial role included strategic development and who in addition had several years of experience to reflect upon the development of non-technological innovations in their current organisation. On the basis of preconditions for choosing the respondents, all the graduates and their final thesis projects were first examined. Following is a list of the criteria for choosing the respondents for this study and their rationale from the perspective of the research question:

1. Their EMBA thesis had to address the topic of strategic development. More specifically, the thesis had to comply with the following perspectives, in accordance with the general characteristics of strategic thinking: (a) a holistic understanding of the organisational context (Bonn 2001, 2005, Liedtka 1998); (b) a visionary, proactive and ambitious perspective (Bonn 2001, 2005, Stacey 1992); and (c) an innovative, business-focused approach to adding customer value (Bonn 2001, Moon 2013, Abraham 2005). These criteria enabled the respondents to evaluate the effectiveness of their EMBA thesis project as a case example of the strategic development of non-technological innovations.
2. Their current managerial work had to be related to strategic issues and business development in order to provide a topical and comprehensive personal professional view of the issues related to the research.
3. They had to be employed by the same organisation as at the time of their graduation. This criterion ensured that they would have sufficient experience with managerial positions in their current organisation to be able to reflect upon the effectiveness and control issues in business development.

The EMBA programme in question is internationally accredited and general by nature without focusing on any particular field of industry or emphasizing any business discipline specifically in its curriculum. The participants are experienced executives and they are advised to choose the topic of their final thesis project based on their personal learning goals and their organization's business interests. The total amount of people meeting the first criterion regarding the topic was 26 out of 108. The second criterion excluded two respondents and the third criteria three more. In addition to these five, one respondent was unavailable for an interview for practical reasons at the time of data collection. The final number of interviewees was 20. When they were contacted by the researcher, all were willing to participate. The interviews, conducted in person during spring 2015, were recorded and transcribed. Anonymity was guaranteed to the respondents before they participated in the interviews. The interviews lasted, on average, for 1 hour and 16 minutes (shortest: 41 minutes; longest: 1 hour and 46 minutes). Appendix 1 provides further descriptive details about the respondents.

Because the specialisation of their EMBA final thesis project on strategic issues formed the primary lens for choosing these managers as respondents, the nature of these projects was analysed as a starting point before the interviews. The average length of the reports was 66 pages. They were categorised using the theoretical concepts and definitions of innovation presented in Section 2.1. All the reports could be considered as addressing non-technological innovations as opposed to technological ones. Some of their more specific characteristics enabled them to be further categorised into four sub-types (Figure 1). They all included a holistic understanding of organisational context, were proactive and visionary and had an innovative business-focused approach, yet their approaches to strategic development differed. All the respondents had a clear chief managerial role in their particular project.

Table 1. Categorisation of examined innovation projects

	Incremental innovation	**Radical innovation**
Business model innovation	*Incremental business model innovation* (6 reports)	*Radical business model innovation* (6 reports)
Managerial innovation	*Incremental managerial innovation* (4 reports)	*Radical managerial innovation* (4 reports)

Even though these kinds of theoretical categorisations can be ambiguous and there is inevitable overlap in defined categories, the projects featured a range of emphases. Half were incremental in nature, and the other half represented approaches that were more radical. There were also differences in the means through which strategic development was approached. Twelve concentrated on business model innovation. Some of these projects approached the strategic setting of the organisation and its business model innovation holistically and as exceeding organisational boundaries, whereas others chose to develop specific aspects of how the company runs its business. Eight projects presented strategic improvements in an organisation's activities and management practices and can be labelled as managerial innovations. *Incremental business model innovation* projects based their contribution on an existing product-market position (e.g. developing the perceived customer experience of the organization). *Radical business model innovation* suggested entering new domains of businesses and pursuing new customers and markets (e.g. building a network-based operating model for new value creation). In *incremental managerial innovation*, practices were improved in a minor and often cumulative way, and the outcome was recognisable improvement built on previously existing organisational and managerial activities (e.g. improving the account management models of the organization). In *radical managerial innovation*, the targeted changes were bigger and the practices developed differed remarkably from the previous ways of working (e.g. establishing an innovation management process in the organization). A full list of the titles of the examined projects is offered in Appendix 2.

The aim was to gather data about the role that management control can play at the level of development processes of innovation (as suggested by Davila et al. 2009, Chenhall and Moers 2015, Revellino and Mouritsen 2009). The next steps consisted of interviews in which the aim was to explore the managers' understandings of the issue. Topics and questions of the semi-structured interviews were designed to provide a managerial view of the issue from the data. The questions (presented in Appendix 3) approached the issue not too directly, but elicited credible evidence and clues for the qualitative interpretation. Open-ended questions avoided imposing predetermined views on the interviewees. For example, instead of asking directly about management control and development procedures that the organizations are employing, respondents were asked, for example, 'How can one know if some new idea or a plan might turn out to be strategically significant?' and 'How do you define goals for strategic development?' The questions facilitated respondents to share practices they use as well as experiences they have had with exceeding the officially set procedures in their organizations. The order of the topics discussed in interviews also supported this aim of gaining their personal managerial view of the issue. The interviews started with more general questions about the respondents' work and progressed in stages into accounting, control and strategic issues.

Though the main emphasis of the interviews was to explore their views about the topics more generally, the respondents' experiences of the strategic project they had implemented as their EMBA final theses were also discussed. Information about the EMBA projects was covered in the end, so that experiences and characteristics from that specific case would not direct the whole course of the interview. The average time of three years since they had completed their studies provided a suitable timespan for the valuation of the project. The period was short enough that essential elements of the project could be accurately remembered. On the other hand, that much time made it possible for them to gain enough distance from the project to be able to evaluate its effectiveness. Considering the evident bias in evaluating one's own managerial efforts, the timespan also made it more feasible to examine the organisational implementation, management control and outcomes of those projects.

The first interview analysis of the EMBA project cases (section 4.1) was rather straightforward, analysing and reporting the experiences and success of those projects. Findings from these led to the next stage, where a thorough examination of the data with qualitative content analysis (QCA) produced the themes characterising the control of development of non-technological innovations.

As a method, content analysis classifies data into fewer categories, providing a meaningful interpretation of the topic (Weber 1990, Patton 2002). Qualitative content analysis (QCA) is systematic (Schreier 2014), but it also makes it possible to leverage conceptual and analytical flexibility (Duriau et al. 2007). In qualitative content analysis, the coding frame is at the heart of the method. The essential themes of the management control of non-technological innovation were created in a data-driven way. The coding frame was created using a procedure of subsumption (Schreier 2012) by adding data-driven subcategories and subsuming those new subcategories into already existing subcategories when they failed to add anything new. All meanings in the material that were of interest to the research question (i.e. What do experienced managers consider essential elements of management control in the strategic development of non-technological innovations?) were translated into the categories of a coding frame. This process of coding frame development was carried out with all the data regarding all interview questions, after which the frame was revised and the overlapping subcategories collapsed. Because no shortcomings of the frame were found in the trial coding, the main analysis was then made without modifying the frame further. The results outlined three key themes – telling a strategic story, engaging in co-creative projects and validating experimentation – through which dynamic and adaptive management control of non-technological innovations could be constructed. These themes of management control were formed respecting the qualitative content analysis principle of reliability through consistency (Schreier 2012, 2014). In the main analysis, this data-driven derived coding frame was saturated by definition, meaning that each formed concept of management control was pronounced in multiple interviews (strategic story in 9, co-creative projects in 12, validating experimentation in 15). No additional evident themes were found in the data.

4 Results

4.1 Project cases of non-technological innovations

The interviews explored how managers had experienced management control of innovation activities and how they more generally understood that strategic development of innovations should be controlled. Their views included ideas, aspirations and experiences of controlling the development that went beyond the officially set practices and control systems in their organisations. Respondents reflected upon strategy, accounting and innovations on three levels: each respondent's EMBA thesis as a single case illustrating the issue, their current managerial area of responsibility in the company, and experiences from their previous professional positions.

Examination of the interview data revealed an interesting finding regarding the non-technological innovation projects carried out in the EMBA theses. Half (10) of the respondents considered their undertaking as unambiguously successful, reaching the goals that were set for them. The other half (10) reported that the projects did not go as originally planned and failed to meet the set objectives. This shows the inevitable element of surprise in non-technological innovation work. The inability to reach the set goals was particularly emphasised in business model innovations, of which only four were unequivocally considered a success. At first glance, this observation is striking. These experienced managers carefully defined their focus on strategic development, invited various people in their organisation to be involved and invested a considerable amount of effort (an average of six months) in these projects. Yet half failed to meet the expected outcomes set for the project in the planning phase. When examining the interview data more thoroughly, the reasons for this intriguingly large failure rate began to emerge.

In two cases, the development of the innovation as such was successful, but business outcomes were still waiting to be fulfilled. Waiting for the business side to take off is time-consuming, if it happens at all. These findings correspond with those of Teece (2010), who stated that it may take time to get a business model right and innovators are often forced to only make educated guesses as to what customers want and what they will pay for. Birkinshaw and Moll (2006) observed that managerial innovations can also take several years before one can say whether innovation really took place and provided value. This risk of customer perception, however, only explained two out of the ten so-called failures. The remaining eight offered interesting insights about the problematics of management control of non-technological innovations. The common denominator in those cases was that the suggested improvement, whether related to managerial practices or business models, was not implemented as planned. In some cases, this was due to organisational changes where the developmental project was adjusted and changed to meet the updated organisational context. In other cases, the projects were simply not implemented on the originally desired scale by the manager primarily responsible for promoting the improvement. Furthermore, the so-called successful projects had iterative elements in their development and implementation, but the other half had been redirected to such an extent that the respondents concluded that the original goals had not been reached.

Interestingly, the failed projects were still considered valuable by the respondents. All saw the projects to have been valuable in some way for the organisation. Albeit the expected limitations of evaluating one's own managerial work, this is to be explained by the nature of non-technological innovations. The failure of the projects did not make the projects worthless; instead, they were failures only to the extent that the originally set goals were not reached. This offers an inspiring starting point for exploring this issue more thoroughly, exceeding the scope of these specific projects. The following section presents the results from the qualitative content analysis of the respondents' views and working life experiences on management control of the development of non-technological innovations.

4.2 Management control of non-technological innovations

A ***strategic story*** was considered an essential element in the management control of non-technological innovations. It directed the developmental process even to the extent that many respondents regarded the story as being more important than financial numbers. This was the case especially in the early stages of the innovation process, whereas the role of financial controls and analysis was emphasised more during the latter stages. Chiesa et al. (2009) have also pointed this out in research on management control in innovation projects. One director approached the issue in the context of business model innovation in the following way:

> If it has a good story and you can also find other companies interested in being partners in the concept, then it is worth it to take it forward, even if it does not

> look that profitable at that point. Because it is possible that in the later stages more ideas are generated that could improve the profitability of the innovation.

Financials were seen, however, as an essential element in securing the resources for the development and implementation of the innovation, but not so much in justifying its relevance. This concern regarding necessary resources corresponds with Lechner and Floyd (2012), who found in particular that exploratory strategic initiatives – i.e. undertakings with goals that are inconsistent with an organisation's current competencies – were less likely to be successful in the resource allocation process. Many respondents considered that even exceeding developmental budgets could be acceptable if the strategic story supporting the non-technological innovation was strong enough. The following quote regarding managerial innovation illustrates the point:

> When the story has been bought and the potential benefits of the improvement have been described and management believes in them, then it is not easily discontinued along the way. You continue the story and keep carrying it forward, even if it requires more resources along the way.

In terms of management control, the theme of strategic story can be characterised in terms of what Simons (1995) calls a belief system, which is used to inspire and direct the search for new opportunities. But innovative ideas and projects also have to fit into the scope of the shared purpose and strategy of the firm. A strategic story operated as a guideline, as a narrative contextualising innovation and as a way of making it appear legitimate (Garud et al. 2014, Bartel and Garud 2009). The theme of strategic story as a control creates a frame for freedom to innovate by assuring that individuals are working towards the predefined strategic direction of the company. This reminds us of boundary systems control in Simons' (1995) framework. One respondent expressed it in the following way:

> We have to be aware of the big strategic goals of the company, towards which we are striving. But within that frame, you have a rather free field to play on.

Co-creative projects formed another distinctive theme in the management control of innovations. The iterative, process-like nature of strategic development involving various people from the organisation was emphasised. Continuous evaluation, control and redirecting the development of innovations were seen as essential for two reasons. First, it was considered valuable as a response to the competence demands of such work. This emphasises the learning aspect, which has been found to be essential in previous research, especially with exploratory strategic initiatives (Lechner and Floyd 2007). One respondent described innovation work in a development team with colleagues as continuous interaction:

> It is typical in these times that nobody is able to develop these innovations alone. No individual is so multi-talented that you could even do the preparations for something big by yourself. You can see the rough outline of the innovation, but it is together that these things must be developed. The competence demand (for major business innovations) is so complex that it would not even cross my mind to start doing something on my own.

Another perspective on the issue regarding co-creative projects was related to change management. Continuous co-creation and interaction with various people were seen to increase commitment inside the organisation. This was especially emphasised in managerial innovation where, instead of making accurate calculations, changing people's mindsets and behaviour was essential. One respondent states the importance of this co-creational movement of thought in the following way:

> If we could see right from the beginning what things are strategically important, then we would make decisions about them. But since we can't know in advance, I think it's all about building an attitude towards the future. If we think we know for certain in advance and demand such unambiguous information, it is only implementing something already planned, not true renewal and innovation.

Project-based working was seen to be instrumental in the development of innovations. Projects were considered as a form of control in a way that, through them, the financial issues could be taken under continuous evaluation. Financial issues and the costs of the innovation development can be compartmentalised through a project, interviewees suggested. However, perhaps more interestingly, managing non-technological innovations as projects was seen as a strategic investment for the success that one should constantly have in a developmental portfolio. One respondent described it thus:

> You should see it as an investment. In some organisations and contexts you perform traditional investment calculations. In our context of knowledge work and organisational change, we should see these innovation initiatives as project-based investments for the future, with strategic aims and allocated financial resources.

In terms of change and renewal, concerns were also raised regarding the use of traditional diagnostic control, which compares set targets and potential outcomes. Some essential changes along the way can be overlooked, but this can have severe consequences, as one respondent reported:

> It is risky to go 120km/h as planned if the road starts to look like it has 90-degree turns on it.

In terms of management control, the theme of co-creative projects can be considered to be what Simons (1995) calls an interactive control. By stimulating searching and facilitating learning, co-creative projects form an essential means for continually debating and redirecting the action plans in the development of new ideas. Continuing co-creation around the adjustments that need to be made brings forward the agile nature of the development of non-technological innovations. This temporal dimension of decision-making and management control also reminds of what Mouritsen and Kreiner (2016) call a 'promissory economy', emphasising the managerial commitment to the ongoing development.

Validating experimentation was the third essential theme describing management control. Investing in success through non-technological innovations was often carried out via smaller experiments. Respondents described developments more often as experiments than as pilot projects. Where pilot projects typically seek to succeed and represent the final testing before a large-scale launch, experimentation was described as something different. Instead of acquiring final proof of the potential of the innovation, as is the case in piloting, experimentation aimed at gaining valuable information. Experiments with non-technological innovations were also allowed to fail. The best experiments were described as the ones where through spending the least amount of resources, you learn the most and can direct your developmental efforts. This required new ways of evaluating the effectiveness of strategic development, emphasising the spirit of 'probe and learn' (Lynn et al. 1996) and going forward. The difference in management control between technological and non-technological innovations was aptly described by one director:

> If we are talking about product development, we follow accurate calculations and stage-gate models in innovations, and constantly analyse the costs and business potential. But in my area of managerial responsibility, where we don't develop products but instead business and managerial models, it is not that black-and-white. In new product development, you make go/no-go decisions. In our operational strategic innovations, we can start gradual experiments to see if the innovations fly or not.

Especially in business model innovation, the role of the customer was considered to be instrumental. Directing the development work based on experiments with customers was seen as essential for increasing the quality of the innovation work, as well as for reducing the risks associated with it. This accords with previous studies which have highlighted customer focus and market knowledge in innovation development (Burgers et al. 2008, Berthon et al. 2004) and which have, in addition, stated that customer focus provides the greatest insight into why an agile organisation operates the way it does (Denning 2016). One respondent describes the pitfall of doing development work that relies only on an inside perspective:

> What I call *framework design* sometimes goes too far. You hone all the details inside the company in your innovation process and then when you tell the story to customers they don't understand anything. My mindset is that in the earliest possible stage, you have to test your assumptions with chosen customers and make small experiments.

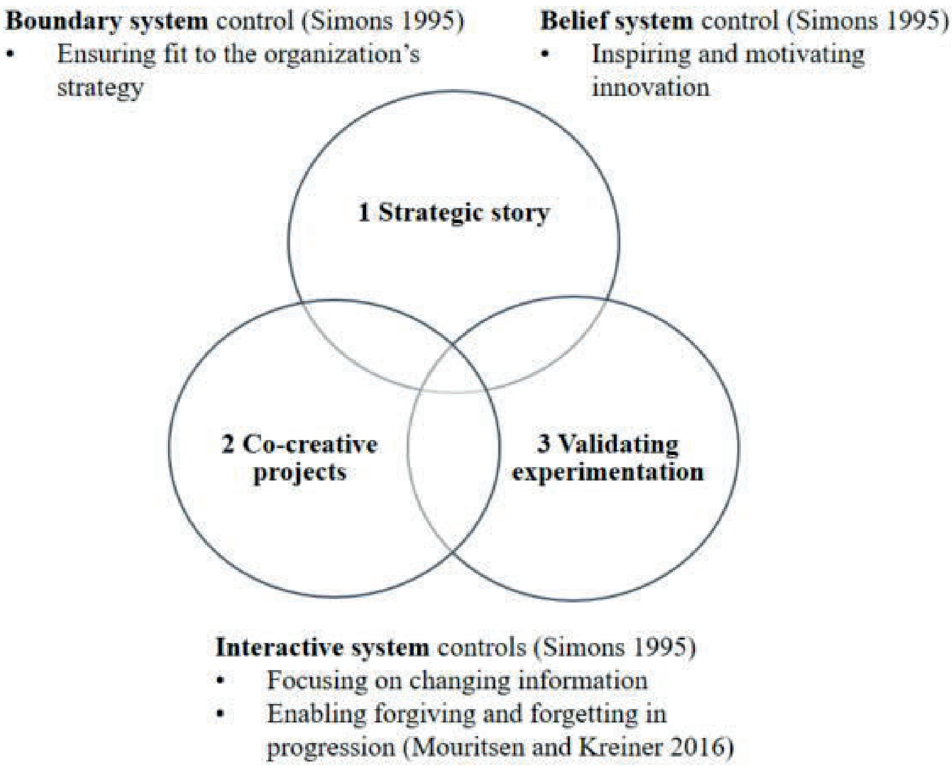
Examined in the light of Simons' (1995) levers of control framework, *validating experimentation* can also be considered as an interactive control. Along with *co-creative projects*, it describes how instead of causal mechanisms, non-technological innovations are developed with solution options changing and adjusting along the way, as emphasised in agile development methods (Rigby et al. 2016).

5 Discussion and conclusion

Theoretical contribution

This research on management control of innovations responds to a call to provide practice-focused research on managers and accounting (e.g. Jönsson 1998, Malmi 2005, Hopwood 2007, Hall 2010, Chua 2007). Previous research has built up an understanding of the adoption and use of different management control systems on a company level (Bisbe and Otley 2004, Bisbe and Malagueno 2009, Ditillo 2012, Mouritsen et al. 2009). Extensive research contributions have also been made in the area of innovation and new product development (e.g. Duhamel et al. 2014; Taipaleenmäki 2014; Jorgensen and Messner 2010; Davila 2000; Nixon 1998). This current study draws on that prior research and extends those by adding a unique perspective to this field of literature by conceptualizing management control of strategic development of non-technological innovations. The previous section presented individual themes and their characteristics. The following section theorizes the themes as management control concepts, in terms of Simons' (1995) levers of control framework and related to the promissory economy approach by Mouritsen and Kreiner (2016). Figure 1 presents this overall theorisation of the results.

Figure 1: Elements of management control of non-technological innovations



A strategic story was described as a motivational frame, a positive and inspirational force, aligned with the strategic narrative and mission of the whole organisation. When examined against Simons' (1995) levers of control framework, the theme of a strategic story had elements from both belief system and boundary system controls. Inspirational belief allowed innovation, but within clearly defined limits, representing both belief and boundary controls. The two other themes, co-creative projects and validating experimentation, can be regarded as interactive controls in Simons' (1995) framework. They focused on strategic uncertainties, changes in significant information and learning during the development work. They described management control fostering face-to-face interaction, discussing and debating about the underlying assumptions, and the current situation of the development work. Validating experimentation emphasised interactive control through investing time and attention, reviewing newly produced information, and stimulating searching and learning. In validating experimentation, customer collaboration and responsiveness to change are crucial. Co-creative projects highlighted the need for continuous interaction and discussions that aim to direct the development work. They also emphasized responding to changes rather than following predefined plans.

The previous classification of the control themes in the light of Simons' (1995) framework offers interesting observations when strategic development is examined in the pursuit of financial success. The process of developing and implementing new ideas is a profoundly economic process (Fried 2017). In co-creative projects, financial aspects were highlighted in order to monitor costs and continually estimate the necessary investments for the development work. However, this was not seen as being done in the manner of tracking progress against predetermined standards, as in diagnostic control systems (Simons 1995). Formulating innovation development as projects was seen to be instrumental in ensuring the resources and signalling what is important. Financial reporting also produced information as the development proceeded. It was suggested that non-technological innovations should be approached as investments in success and as attempts to enhance an organisation's long-term financial performance. The lack of diagnostic control found in this study is consistent with Revellino and Mouritsen's (2009) finding that having an initial strong strategic outlook is futile, and it is more realistic to consider original visions as soft design and to think about control as an adaptive system along the way. The strategic development of non-technological innovations is an imprecise and creative process. Even in the context of incremental innovation driven by top management, control cannot be characterized dominantly as diagnostic control, as suggested by Davila et al. (2009) in their general innovation control framework. Therefore, the strategic story was instrumental in obtaining legitimacy and direction for the development, in other words, for aligning the development with corporate strategy (Akroyd et al. 2016, Slagmulder 1997). This observation further develops the notion that the meaningfulness of innovation efforts over a longer timespan requires subjective measures (Chenhall and Moers 2015, Davila 2000). These conclusions are also in line with Weick's assertion (1995) that in the context of sensemaking in organisations, people favour plausibility.

The theorization of the results presented in Figure 1 also expands on a recently published work of Mouritsen and Kreiner (2016), who have suggested that a decision is not just the end of the decision-making process, but that decisions are also promises which open new beginnings. According to this view, decisions set things in motion. A promise is a commitment to invest and to continually adjust the development work. Strategic development has no straightforward means–end relationship. Based on the findings of this study, this is especially emphasised in the context of developing non-technological innovations. This study enhances the work of Mouritsen and Kreiner (2016) by specifically explaining the mechanisms through which the unfolding world is addressed by managers. The themes of co-creative projects and validating experimentation are forms of control which make Mouritsen and Kreiner's (2016) 'forgetting and forgiving' possible by facilitating action around the adjustments that have to be continually made. This finding corresponds with the following observation from Davila et al. (2009): 'Entrepreneurship and innovation are about taking advantage of exceptions; experimenting, failing and succeeding; uncertainty and volatility; inefficiencies; adapting to unforeseen opportunities; and foremost creativity.' Previous literature (e.g. Davila et al. 2009, Chenhall and Moers 2015, Davila 2000, Revellino and Mouritsen 2009) has suggested that management control of innovations requires an adaptive system emphasizing subjective measures instead of diagnostic control. Building a theory of management control in these uncertain environments is something that needs to be done (Fried 2017). The finding that non-technological innovations cannot be easily evaluated emphasises the importance of management control *during* their development. Yet little is known about this aspect of management control. This research provides a unique contribution by conceptualizing managers' understanding of the essential elements though which the management control of creative development work of non-technological innovations could be outlined.

Managerial implications

This study offers several managerial implications. The results indicate that the development of managerial and business model innovations are typically less structurally managed and less often governed by formal management control systems than technological innovations are. This is consistent with Birkinshaw et al. (2008), who noted that the expertise and competencies needed for non-technological innovation are often less well established in organisations than they are for technological innovations. Technological innovation is by definition technical, and thus more codified. New product development and processes are typically run and developed by designated and sufficiently educated professionals. In this study, management innovation – and even business model development – were often found to be carried out alongside other managerial responsibilities. These non-technological innovations tend to emerge through necessity as a response to a problem facing the organisation.

The ever-changing business environment and increasing emphasis on non-tangible resources make it harder and harder to define investments beforehand and then monitor their progress along a preset path. In this context, upper management can even overcontrol development projects and negatively affect their performance (Bonner et al. 2003). Due to their characteristics, the development of non-technological innovations cannot be controlled and their progress cannot be validated with ease. This aspect of the strategic development work of non-technological innovations is intertwined with the way it needs to be controlled. The findings of this research extend the suggestions that the development of innovations should involve a combination of different control principles and approaches. This echoes the studies on innovation projects by Ylinen and Gullkvist (2012, 2014), which find that a combined use of controls (mechanistic and organic controls in their classification) enhances the performance of innovation projects. This present study offers a theorization of control concepts, which can be used to design management control of innovations not in an ad hoc manner, but as a planned and managed process that still recognizes the iterative and collaborative nature of the development work.

In addition to designing the management control, this study provides further managerial implications regarding the methods of innovation development work. Whereas the stage-gate models and mechanistic management control emphasise high standards of execution, the agile approaches prioritise quality in learning, customer focus and experimentation. This dynamic way of working can reach its full potential in situations where close cooperation and feedback from end-users is essential. The findings of this study resonate with Rigby et al. (2016), who state that executive action in strategy development, the cultivation of breakthrough innovation and the improvement of organisational collaboration can benefit from the application of agile development work methods. This study expands the recent suggestions in the literature for integrating the agile and stage-gate development approaches in product development settings (Cooper 2014, Cooper and Sommer 2016, Sommer et al. 2015) into the context of non-technological innovations. The development of managerial and business model innovation was found to possess favourable conditions where interactive and experimental approaches are beneficial. Instead of gatekeepers predefining inputs and scrutinising deliverables, the desired solution is often initially unknown and the requirements will most likely change along the way.

Even though the results of this study emphasize the interactive and experimental nature of strategic development work, they also highlight more traditional approaches of managing innovation work. Predefining development initiatives as projects was seen as essential in securing resources as well as in monitoring financial aspects as the development work proceeds. Non-technological innovations were described as investments, where certain expenditures are required in the present in order to generate revenues in the future. Controlling the development work in a project-based way refers to the approach in Anthony et al. (2014), which addresses the control, especially the *feeling of control*, in development work. In traditional development methods, one has a plan that covers the project from beginning to end, whereas in more agile development one does not know what is going to happen next. As Anthony et al. (2014) also argue, managers should not underestimate the value of the feeling of control, which stems from knowing what is going to happen next, even if plans are revised along the way.

The collaborative nature of strategic development work and the control of non-technological innovations was also highlighted from a change management perspective. Instead of developing technological innovations, which 'sell themselves' when they are ready, the success of managerial and business model innovations requires many people to be involved in the development process. The implementation of non-technological innovation postulates a change of mindset and behaviour, something that personal involvement in the process enhances. The more an organisation has people thinking strategically, the more readily it can respond to changes in the business environment (Tavakoli and Lawton 2005). Non-technological innovations by definition do not concentrate on technology, but on people.

Limitations and suggestions for further research

This study has several limitations. The conclusions are built on the overall understanding and experiences of respondents coming from various organisations. Therefore, it is obvious that this research distances itself from building an in-depth understanding of any specific organisational setting. The control themes formed through the interview data were also observable in the examined EMBA final project cases, but the data are limited in, for example, promptly comparing the application of the suggested themes of control during the process and the success of these specific projects. This research used the context of the EMBA theses as a starting point, but for its main contribution deliberately built on the experiences and views of the interviewed respondents; this was also done to minimise the bias of respondents evaluating their own thesis projects. This study is also limited by its selected focus on experienced managers instead of, for example, accounting professionals. However, by drawing on the experiences of multiple experts representing various organizations, the developed control themes offer potential for transferability to similar managerial contexts within the scope of managers' understanding of the issue. This study invites managers to make connections between the outlined control elements and their own experience. In addition, the present study is, to the best of the author's knowledge, unique in exploring management control in the strategic development of non-technological innovations, so a number of suggestions for future studies emerge. Future research could examine the developed framework of control themes and apply it in various specific organisational settings where more case-specific data are available during the development of innovations. The understanding of actors other than experienced managers could also be examined.

The findings of this study lead us to consider approaches in the management control of non-technological innovation development that go beyond simply comparing outcomes in different phases against originally set goals. With business model and managerial innovations, an appropriate framework of management control could be built on aligning the innovation under development with the strategic story of the organisation, leveraging co-creation in the projects and proceeding through experimentation with close customer contact. Constructing management control with these elements could result in a formal system that does not enforce reluctant compliance but which, instead, acts as an enabling system (Adler and Borys 1996) that facilitates responses to business development challenges. This type of management control would operate as a learning machine (Burchell et al. 1980) supporting successful innovations.

References

Abraham, S. (2005), “Stretching strategic thinking”, *Strategy and Leadership*, Vol. 33 No. 5, pp. 5–12.

Adler, P.S. and Borys, B. (1996), “Two types of bureaucracy: Enabling and Coercive”, *Administrative Science Quarterly*, Vol. 41 No. 1, pp. 61–89.

Akroyd, C., Biswas, S., S., N., Chuang, S. (2016), “How Management Control Practices Enable Strategic Alignment during the Product Development Process”, in Epstein, M., J., Malina, M., A. (ed.) *Advances in Management Accounting,* Vol. 26 pp. 99 – 138.

Anthony, R.N., Govindarajan, V., Hartmann, F.G.H., Kraus, K., and Nilsson, G. (2014), *Management Control Systems*. First European Edition. McGraw-Hill Education, London.

Bartel, C.A. and Garud, R. (2009), “The Role of Narratives in Sustaining Organizational Innovation”, *Organization Science*, Vol. 20 No. 1, pp. 107–117.

Beck, K., Beedle, M., van Bennekum, A., Cockburn, A., Cunningham, W., Fowler, M., Grenning, J., Highsmith, J., Hunt, A., Jeffries, R., Kern, J., Marick, B., Martin, R.C., Mellor, S., Schwaber, K., Sutherland, J., and Thomas, D. (2001), *Manifesto for Agile Software Development*. Agile Alliance. Available at http://agilemanifesto.org/.

Bedford, D.S. (2015), “Management control systems across different modes of innovation: implications for firm performance”, *Management Accounting Research*, Vol. 28, pp. 12–30.

Berthon, P., Mac Hulbert, J., and Pitt, L. (2004), “Innovation or customer orientation? An empirical investigation”, *European Journal of Marketing*, Vol. 38 Nos. 9–10, pp. 1065–1090.

Birkinshaw, J. (1997), “Entrepreneurship in multinational corporations: The characteristics of subsidiary initiatives”, *Strategic Management Journal*, Vol. 18 No. 3, pp. 207–229.

Birkinshaw, J. and Moll, M. (2006), “How Management Innovation Happens”, *Sloan Management Review*, Vol. 47 No. 4, pp. 81–88.

Birkinshaw, J. and Moll, M. (2009), “The sources of management innovation: When firms introduce new management practices”, *Journal of Business Research*, Vol. 62 No. 12, pp. 1269–1280.

Birkinshaw, J., Hamel, G., and Mol, M.J. (2008), “Management Innovation”, *Academy of Management Review*, Vol. 33 No. 4, pp. 825–845.

Bisbe, J. and Malagueno, R. (2009), “The choice of interactive control systems under different innovation management modes”, *European Accounting Review*, Vol. 18, pp. 371–405.

Bisbe, J. and Otley, D. (2004), “The effects of the interactive use of management control systems on product innovation”, *Accounting, Organizations and Society*, Vol. 29, pp. 709–737.

Bonn, I. (2001), "Developing strategic thinking as a core competency", *Management Decision*, Vol. 39 No. 1, pp. 63–71.

Bonn, I. (2005), "Improving strategic thinking: a multilevel approach", *Leadership & Organization Development Journal*, Vol. 26 No. 5, pp. 336–354.

Bonner, J.M., Ruekert, R.W., and Walker, Jr., O.C. (2003), "Upper management control of new product development projects and project performance", *Journal of Product Innovation Management*, Vol. 19 No. 3, pp. 233–245.

Burgers, J.H., van den Bosch, F.A.J., and Volberda, H.W. (2008), "When new business development projects fail: coping with the differences of technological versus market knowledge", *Long Range Planning*, Vol. 41 No. 1, pp. 55–73.

Burchell, S., Clubb, C., Hopwood, A., Hughes, J., and Nahapiet, J. (1980), "The roles of accounting in organizations and society", *Accounting, Organizations and Society*, Vol. 15 No. 1, pp. 5–27.

Camison, C. and Villar-Lopez, A. (2014), "Organizational innovation as an enabler of technological innovation capabilities and firm performance", *Journal of Business Research*, Vol. 7 No. 1, pp. 2891–2902.

Chenhall, R.H. and Moers, F. (2015), "The role of innovation in the evolution of management accounting and its integration into management control", *Accounting, Organizations and Society*, Vol. 47, pp. 1–72.

Chesbrough, H. (2007), "Business model innovation: It's not just about technology anymore", *Strategy and Leadership*, Vol. 35 No. 6, pp. 12–17.

Chesbrough, H., Appleyard, M. (2007), "Open Innovation and Strategy", *California Management Review*, Vol 50 No. 1, pp57-76

Chesbrough, H. (2006), Open Innovation, *Harvard Business School Press,* Boston

Chesbrough, H., (2010), "Business Model Innovation: Opportunities and Barries", *Long Range Planning*, Vol 43 No 2-3, pp 354-363

Chiesa, V., Frattini, F., Lamberti L., and Noci G. (2009), "Exploring management control in radical innovation projects", *European Journal of Innovation Management*, Vol. 12 No. 4, pp. 416–444.

Chua, W.F. (2007), "Accounting, measuring, reporting and strategizing – re-using verbs: A review essay", *Accounting, Organizations and Society*, Vol. 32 Nos. 4–5, pp. 487–494.

Cooper, R.G. (1990), "Stage-gate systems: A tool for managing new products", *Business Horizons*, Vol. 33 No. 3, pp. 44–54.

Cooper, R.G. (2014), "What's next? After Stage-Gate", *Research-Technology Management*, Vol. 157 No. 1, pp. 20–31.

Cooper, R.G. and Sommer A.F. (2016), "The Agile–Stage-Gate Hybrid Model: A Promising New Approach and a New Research Opportunity", *The Journal of Product Innovation Management*, Vol. 33, pp. 513–526.

Curtis, E. and Sweeney, B. (2017), "Managing different types of innovation: mutually reinforcing management control systems and the generation of dynamic tension", *Accounting and Business Research*, Vol 47, No 1, pp 313-343

Damanpour, F. and Aravind, D. (2011), "Managerial Innovation: Concepts, Processes, and Antecedents", *Management and Organizational Review*, Vol. 8 No. 2, pp. 423–454.

Damanpour, F. and Gopalakrishnan, S. (2001), "The dynamics of the adoption of product and process innovations in organizations", *Journal of Management Studies*, Vol. 38 No. 1, pp. 45–65.

Davila, A. (2000), "An empirical study on the drivers of management control system's design in new product development", *Accounting, Organizations and Society*, Vol. 25 Nos. 4–5, pp. 383–409.

Davila, A. and Foster, G. (2009), "The adoption and evolution of management control systems in entrepreneurial companies: evidence and a promising future", in Chapman, C.S., Hopwood, A.G., and Shields, M.D. (eds.), *Handbook of Management Accounting Research*, Vol. 3, pp. 1323–1336.

Davila, A., Foster, G. and Oyon, D. (2009), "Accounting and control, entrepreneurship and innovation: venturing into new research opportunities", *European Accounting Review*, Vol. 18 No. 2, pp. 281–311.

Denning, S. (2016), "Understanding the three laws of Agile", *Strategy and Leadership*, Vol. 44 No. 6, pp. 3–8.

Ditillo, A. (2012), "Designing Management Control Systems to Foster Knowledge Transfer in Knowledge-Intensive Firms: A Network-Based Approach", *European Accounting Review*, Vol. 21, pp. 425–450.

Duhamel, F., Reboud, S., and Santi, M. (2014), Capturing value from innovations: the importance of rent configurations, *Management Decision*, Vol. 52, pp. 122–143.

Duriau, V.J., Reger, R.K., and Pfarrer, M.D. (2007), "A Content Analysis of the Content Analysis Literature in Organisational Studies: Research Themes, Data Sources, and methodological Refinements", *Organizational Research Methods*, Vol. 10, pp. 5–34.

Dutton, J.E., Ashford, S.J., O'Neill, R.M., and Lawrence, K.A. (2001), "Moves that matter: Issue selling and organizational change", *Academy of Management Journal*, Vol. 33 No. 4, pp. 716–736.

Fried, A. (2017), "Terminological distinctions of 'control': a review of the implications for management control research in the context of innovation", *Journal of Management Control*, Vol. 28 No. 1, pp. 5–40.

Fried, A., Götze, U., Möller, K., and Pecas, P. (2017), “Innovation and management control”, *Journal of Management Control*, Vol. 28 No. 1, pp. 1–4.

Gassmann, O., Enkel, E., Chesbrough, H., (2010), “The Future of open innovation”, *R&D management*, Vol 40 No. 3, pp 213-221.

Garud, R., Gehman, J., and Giuliani, A.P. (2014), “Contextualizing entrepreneurial innovation: A narrative perspective”, *Research Policy*, Vol. 43 No. 7, pp. 1177–1188.

Hall, M. (2010), “Accounting information and managerial work”, *Accounting, Organizations and Society*, Vol. 35 No. 3, pp. 301–315.

Heidmann, M., Shäffer, U., and Strahringer, S. (2008), “Exploring the role of management accounting systems in strategic sensemaking”, *Information Systems Management*, Vol. 25 No. 3, pp. 244–257.

Henri, J.F. (2006), “Management control systems and strategy: a resource-based perspective”, *Accounting, Organizations and Society*, Vol. 31 No. 6, pp. 529–558.

Hopwood, A. (2007), “Whither accounting research?”, *The Accounting Review*, Vol. 82 No. 5, pp. 1365–1374.

Innes, J., Mitchell, F., Sinclair, D. (2000), “Activity-based costing in the U.K.’s largest companies: a comparison of 1994 and 1999 survey results”, *Management Accounting Research*, Vol 11 No. 3, pp. 349-363

Jansen, J.P., Van den Bosch, F.A.J., and Volberda, H.W. (2006), “Exploratory Innovation, Exploitative Innovation and Performance: Effects of Organizational Antecedents and Environmental Moderators”, *Management Science*, Vol. 52 No. 11, pp. 1661–1674.

Johanson U., Skoog, M., Backlund, A., Almqvist, R. (2006), “Balancing dilemmas of the balanced scorecard”, *Auditing & Accountability Journal*, Vol. 19 No. 6, pp. 842-57

Jönsson, J. (1998), “Relate management accounting research to managerial work!”, *Accounting, Organizations and Society*, Vol. 23 No. 4, pp. 411–434.

Jorgensen, B. and Messner, M. (2010), “Accounting and strategizing: A case study from new product development”, *Accounting, Organizations and Society*, Vol. 25, pp. 184–204.

Langfield-Smith, K. (1997), “Management control systems and strategy: A critical review”, *Accounting, Organizations and Society*, Vol. 22 No. 2, pp. 207–232.

Lechner, C. and Floyd, S. W. (2007), “Searching, Processing, Codifying and Practicing – Key Learning Activities in Exploratory Initiatives”, *Long Range Planning,* Vol. 40 No. 1, pp. 9-29

Lechner, C. and Floyd, S.W. (2010), “Searching, Processing, Codifying and Practicing – Key Learning Activities in Exploratory Initiatives”, *Long Range Planning*, Vol. 40 No. 1, pp. 9–29.

Lechner, C. and Floyd, S.W. (2012), “Group influence activities and the performance of strategic initiatives”, *Strategic Management Journal*, Vol. 33 No. 5, pp. 478–495.

Liedtka, J.M. (1998), “Strategic Thinking: Can it be Taught?”, *Long Range Planning*, Vol. 31 No. 1, pp. 120–129.

Lopez-Valeiras, E., Gonzales-Sanchez, M.B., and Gomez-Gonde, J. (2016), “The effects of interactive use of management control systems on process and organizational innovation”, *Review of Managerial Science*, Vol. 10 No. 3, pp. 487–510.

Lynn, G., S., Morone, J., G., Paulson, A., S. (1996), “Marketing and Discontinuous Innovation: The Probe and Learn Process, *California Management Review*, Vol. 38 No. 3, pp. 8-37

Malmi, T. (2005), “Kohti käytännöllisiä teorioita liiketaloustieteessä, toiveajatteluako?”, *Finnish Journal of Business Economics*, Vol. 4, pp. 553–559.

March, J.G. (1991), “Exploration and exploitation in organizational learning”, *Organization Science*, Vol. 2 No. 1, pp. 71–87.

Markides, C. (2005), “Disruptive Innovation, in need of better theory”, *Journal of Product Innovation Management*, Vol. 12 No. 1, pp. 19–25.

Martyn, P, Sweeney, B., and Curtis, E. (2016), “Strategy and control: 25 years of empirical use of Simons’ Levers of Control framework”, *Journal of Accounting and Organizational Change*, Vol. 2 No. 3, pp. 281–324.

Moon, B. (2013), “Antecedents and outcomes of strategic thinking”, *Journal of Business Research*, Vol. 66 No. 10, pp. 1698–1708.

Moll, J. (2015), “Editorial: Special issue on innovation and product development”, *Management Accounting Research*, Vol. 28 No. 3, pp. 2–11.

Mouritsen, J. and Kreiner, K. (2016), “Accounting, decisions and promises”, *Accounting, Organizations and Society*, Vol. 49 No. 2, pp. 21–31.

Mouritsen, J., Hansen, A., and Hansen C.O. (2009), “Short and long translations: Management accounting calculations and innovation management”, *Accounting, Organizations and Society*, Vol. 34, pp. 738–754.

Nixon, B. (1998), “Research and development performance measurement: a case study”, *Management Accounting Research*, Vol. 9, pp. 329–355.

OECD (2005), *Oslo Manual, Guidelines for collecting and interpreting innovation data*, 3rd edition. OECD Publishing.

Patton, M.Q. (2002), *Qualitative Research and Evaluation Methods*, 3rd ed., Sage, Thousand Oaks, CA.

Pesämaa, O. (2017), “Personnel- and action control in gazelle companies in Sweden”, *Journal of Management Control*, Vol. 28 No. 1, pp. 107–132.

Reimer, M., Van Doorn, S., and Heyden, M.L.M. (2016), “Managers and the management control systems in the strategy process”, *Journal of Management Control*, Vol. 27 No. 2, pp. 121–127.

Revellino, S. and Mouritsen, J. (2009), “The multiplicity of controls and the making of innovation”, *European Accounting Review*, Vol. 18 No. 2, pp. 341–369.

Rezania D., Baker, R., and Burga, R. (2016), “Project control: an exploratory study of levers of control in the context of managing projects”, *Journal of Accounting and Organizational Change*, Vol. 12 No. 4, pp. 614–635.

Rigby, D.K., Sutherland, J., and Takeuchi, H. (2016), “Embracing Agile: How to master the process that is transforming management”, *Harvard Business Review*, Vol. 94 No. 5, pp. 41–50.

Schreier, M. (2012), *Qualitative Content Analysis in Practice*. Sage Publications Limited, London.

Schreier, M. (2014), “Qualitative Content Analysis”, in Flick, U. (ed.), *The Sage Handbook of Qualitative Data Analysis*, London: Sage Publications Ltd.

Sethi, R. and Iqbal, Z. (2008), “Stage-Gate Controls, Learning Failure, and Adverse Effect on Novel New Products”, *Journal of Marketing*, Vol. 72 No. 1, pp. 118–134.

Simons, R. (1995), *Levers of Control: How Managers Use Innovative Control Systems to Drive Strategic Renewal*, Harvard Business School Press, Boston, MA.

Simons, R. (2000), *Performance Measurement and Control Systems for Implementing Strategy: Text and Cases*, Prentice Hall, Upper Saddle River, NJ.

Slagmulder, R. (1997), Using management control systems to achieve alignment between strategic investment decisions and strategy, *Management Accounting Research,* Vol. 8 No 1, pp. 103-139

Sommer, A.F., Hedegaard, C., Dukovska-Popovska, I., and Steger-Jensen, K. (2015), “Improved Product Development Performance through Agile/Stage-Gate Hybrids: The Next-Generation Stage-Gate Process?”, *Research-Technology Management*, Vol. 58 No. 1, pp. 34–45.

Stacey, R. (1992), *Managing the Unknowable: Strategic Boundaries Between Order and Chaos in Organizations*. Jossey-Bass Wiley Company, San Francisco, CA.

Taipaleenmäki, J. (2014), “Absence and Variant Modes of Presence of Management Accounting in New Product Development – Theoretical Refinement and Some Empirical Evidence”, *European Accounting Review*, Vol. 23, pp. 291–334.

Tatikonda, M.V. and Rosenthal, R.S. (2000), “Successful execution of product development projects: Balancing firmness and flexibility in the innovation process”, *Journal of Operations Management*, Vol. 18 No. 4, pp. 401–425.

Teece, D.J. (2010), “Business Models, Business Strategy and Innovation”, *Long Range Planning*, Vol. 43 Nos. 2–3, pp. 172–194.

Tervala, E., Laine, T., Korhonen, T., and Suomala, P. (2017), “The role of financial control in new product development: empirical insights into project managers’ experiences”, *Journal of Management Control*, Vol. 28 No. 1, pp. 81–106.

Tavakoli, I. and Lawton J. (2005), “Strategic thinking and knowledge management”, *Handbook of Business Strategy*, Vol. 6, pp. 155–160.

Weber, R. (1990), *Basic Content Analysis*. Sage Publications, Thousand Oaks, CA.

Weick, K., E. (1995). *Sensemaking in organizations*, Thousand Oaks, California, Sage Publications

Whittle, A. and Muller, F. (2010), “Strategy, enrolment and accounting: the politics of strategic ideas”, *Accounting, Auditing & Accountability Journal*, Vol. 23 No. 5, pp. 626–646.

Ylinen, M. and Gullkvist, B. (2012), “The effects of tolerance for ambiguity and task uncertainty on the balanced and combined use of project controls”, *European Accounting Review*, Vol. 21 No. 2, pp. 395–415.

Ylinen, M. and Gullkvist, B. (2014), “The effects of organic and mechanistic control in exploratory and exploitative innovation”, *Management Accounting Research*, Vol. 25 No. 1, pp. 93–112.

Zawawi, M., H., N., Hoque, Z. (2010), “Research in management accounting innovations: An overview of its recent development”, *Qualitative Research in Accounting & Management*, Vol. 7 No. 4, pp. 505-568

Zott, C. and Amit, R. (2010), “Business Model Design: An Activity System Perspective”, *Long Range Planning*, Vol. 45 Nos. 2–3, pp. 216–226.

Zott, C., Amit, R., and Massa, L. (2011), “The Business Model: Recent Developments and Future Research”, *Journal of Management*, Vol. 37 No. 4, pp. 1019–1042.

Appendix 1. Descriptive details of interviewees

	Job title	Company size*		Field of industry	Age	Gender
		SME	Large			
1	Production director		x	Manufacturing	45	M
2	Business director		x	Education services	46	M
3	Account director	x		Professional services	49	F
4	Senior project manager	x		Education services	46	M
5	Manager of product management	x		Technical wholesale	41	M
6	Development director		x	Media	54	M
7	Finance manager		x	Energy	47	M
8	Production unit director	x		Food Industry	55	M
9	Executive director	x		Professional services	50	F
10	Director	x		Social services	54	F
11	Sales manager		x	Food Industry	44	F
12	Director of administration		x	Public sector	53	F
13	Category manager		x	Retail	45	M
14	Account director		x	Real estate services	49	M
15	CEO	x		Travel	48	F
16	Development director		x	Finance	57	F
17	Director		x	Energy	46	F
18	Director		x	Software	46	M
19	CIO		x	Healthcare	49	M
20	Channel development manager		x	Food Industry	56	M

* Small and medium-size enterprise (SME) definition according to European Union recommendation 2003/361, meaning organisations with less than 250 employees.

Appendix 2. EMBA final theses topics

1. Local food as a competitive advantage for company X
2. Renewed business and contracting model securing the future of company X
3. Strategic knowledge-base of managing a municipal enterprise group
4. Account management in a small design-company. -"Most wanted partner in visual communications"
5. Research on the success factors of a new product in bank Group X
6. Differentiating solutions value on customer relationship with the help of customer insight
7. Overwhelming customer experience. -Concept manual for the business of the future in company X
8. Developing marketing and services to Russian customers in company X
9. Building an education value network in industry X
10. Pricing as a competitive advantage in retail. Effect of impression about the price in choosing where to buy
11. With innovations to a sustainable tomorrow. -Innovation process as part of sustainable business
12. Life Cycle planning and roadmaps for existing customers in company X
13. ICT-governance and organizational architecture in organization X
14. The triple helix institute of higher education on entrepreneurship -continuous renewal and management challenges
15. From cooperation to partnership -development of suppliers relationships in company X
16. Strategy work of multi-actor organization -case organization X
17. Customer service improvement in business area X
18. Learning story about building an innovation system into enterprise X
19. Perspectives into the future of field of industry X
20. Account management in municipalities
21. Customer as a developer of products and services
22. Success factors of the future in the field of industry X
23. Hurricane -Business of a company X
24. Competitive strategy of goods trade in Company X and send-offs for successful strategy implementation
25. Local supplier of the future in company X
26. Growth strategy of sales in company X

Appendix 3. Interview Questions: areas of inquiry

Current work
Describe your work and area of managerial responsibility.
How do you know you have done a good job?
How are accounting and financial issues related to your work?
What accounting practices do you find useful / not useful in your work?

Strategic thinking
How do you plan ahead and practise strategic foresight in your work?
How can one know if some new idea or a plan might turn out to be strategically significant?
When was the last time you practised strategic thinking?
How do you define goals for strategic development?
What is your personal view on the strategic development of your business based on?
How are strategic ideas and initiatives sold and operationalised in an organisation?
Do you see any dangers and challenges related to strategic thinking?

Strategy and accounting issues
What is the role of financial information in strategic thinking?
When creating and envisioning something new, what accounting frameworks and practices do you consider useful / not useful?
Do you produce calculations yourself in your work?
Do you utilise calculations made by others?
Do you see any challenges or dangers when using accounting in strategy work?
Is there something else you would like to say about strategic thinking and accounting related to your work and experience?

Strategic thinking case: EMBA final thesis project
How would you describe your EMBA final thesis as a project (time span, who was involved, etc.)?
How would you evaluate it now as a strategic project?
How would you estimate the financial impact of the project?
How would you describe accounting thinking and financial quantifications as part of the project?

IV

DRAWING THE PREMISES FOR PERSONALIZED LEARNING: ILLUSTRATIONS OF MANAGEMENT AND ACCOUNTING

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Drawing the premises for personalized learning: Illustrations of management and accounting

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ABSTRACT

This paper reports on a teaching innovation using participant-generated drawings. Experienced managers were asked to produce a drawing to illustrate their work from an accounting perspective. The drawings were then used to make the managerial context of the participants the explicit starting point for personalized executive learning. This study is the first in the sphere of accounting education and research to take drawing seriously as a learning method. The results of the experiment show how drawing can be further used as a tool in management education by facilitating the visualization of the managerial contexts participants work within.

1. Introduction

This paper reports on a teaching innovation in the field of accounting and managerial work. Participants in an executive MBA accounting course completed a learning assignment using visualization, which involved experienced managers producing a drawing to illustrate their managerial work from an accounting perspective. This article aims to contribute to the literature by exploring the potential of drawing as a novel pedagogical approach in management education, a field accused of being overly focused on traditional teaching models and approaches (e.g., Asik-Dizdar, 2015; Bennis & O'Toole, 2005; Khurana, 2007; Mintzberg, 2004; Pfeffer & Fong, 2002; David, David, David, 2011; Rubin & Dierdorff, 2009; Miley & Read, 2018; Minocha, Reynolds, & Hristov, 2017). More specifically, despite recent innovations (e.g., Krom & Williams, 2011; Tucker, 2017), the accounting elements of MBA programs have also been criticized for a lack of innovativeness (e.g., Böer, 2000; Hermanson, Hermanson, Alsup, 1998). The critical importance of accounting education research and utilizing its findings to develop teaching has been highlighted as one area in need of improvement (Ravenscroft, Rebele, St. Pierre, 2008; Rebele and St Pierre, 2015).

Several suggestions have been made to develop management education for experienced learners so that it better recognizes the experience of the participants as a strength (Mintzberg, 2004; Carvin, 2007; Minocha et al., 2017; Roglio & Light, 2009; Ruane, 2016; Currie & Knights, 2003; Tushman, O'Reilly, Fenollosa, Kleinbaum & McGrath, 2007). However, there remains an empirical deficit in pedagogical innovations in personalized learning. This paper reports an experiment adopting a personalized learning approach with the use of participant-generated drawings that aim to highlight participants' experi-

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ences, beliefs, and understandings (alongside becoming more aware of them) and relate them to the learning process on a personal level.

Humans are visual creatures; our capacity to process information visually exceeds the capability of other senses. In working life, visual modes of representation are becoming more widespread, driven also by the development in digital working environments and presentation technologies. However, the process of developing pictorial presentations has traditionally been viewed merely as a necessary skill set in work related to design (Purcell & Gero, 1998). Despite the pervasiveness of visual information in contemporary society, the importance of producing visualizations and utilizing such approaches in managerial work has received scant attention in the research literature. Few studies have been done on using drawings and other forms of visuals in an organizational and professional life context (for notable exceptions, see Bryans & Mavin, 2006; Bowen, 2016; Han & Liang, 2015; Clarke & Holt, 2017) and little attention has been paid to the role of drawing in the process of learning. To date, the visual mode of meaning construction has remained largely unexplored in management studies (Meyer, Höllerer, Jancsary, & Leeuwen, 2013).

This research responds to many calls for further study on the use of visuals in accounting and management research (Quattrone, 2009; Busco & Quattrone, 2014; Garreau, Mouricou, & Grimand, 2015; Meyer & Höllerer, Jancsary, & Leeuwen, 2013; Davison & Warren, 2009). Even though drawing has been suggested as a method for qualitative research (Zweifel & Van Wezemael, 2012; Copeland & Agosto, 2012; Stiles, 2004), it remains a rarely used approach in facilitating respondents to express their understandings of an issue or phenomenon. This study introduces drawing to a new sphere: an executive learners' accounting course.

This paper presents unique data. The drawings produced by the participants show how they understood their managerial work in an accounting context. The illustrations are examined in content as well in the form of visualization with an interpretative analysis approach (Hatch, 2002). Using a collective construal approach, the findings were also discussed with the participants in order to make more sense of the drawings. The primary focus of this study, however, is to examine the drawing experiment as a pedagogical innovation. Therefore, the paper reports critically on the execution and outcomes of the learning experiment conducted with the participants working in managerial roles in various organizations. Our results offer an illuminating example of developing accounting education by highlighting the individual managerial contexts of executive students which form the bases for learning.

The findings of this paper suggest that drawing can be used as an approach in personalized learning that is grounded in the learner's managerial work context. The managerial work context sets starting points and even demarcates learning, but also establishes the essential directions that are meaningful to a manager thinking about accounting and what constitutes building financial success. Conceptualizing one's understandings by drawing offers a novel approach, different from traditional written or spoken word approaches, which have dominated management research and education. Visual expression triggers a sensemaking process that can be used to respond to our ideas and understandings. Using visualizations can be a learning tool in management education that clarifies those essential elements for both educators and participants. The collective construal approach, where the outcomes of the drawing exercise were afterwards discussed in a group with the participants, also proved to be valuable and provided several avenues for further development of the drawing method.

This paper contributes to the literature by showing how drawing can be used to advance a personalized learning approach, taking the experiences and unique setting of each adult learner into consideration as suggested by various authors (e.g. Minocha et al., 2017; Roglio & Light 2009; Ruane, 2016; Tushman, O'Reilly, Fenollosa, Kleinbaum, McGrath, 2007). Moreover, visualizations making the managerial context of the participants more explicit also offered a motivational starting point for learning. The drawing experiment helped managerial students to become more aware of their previous understandings and offered the students more opportunity for agency around their learning, therefore fostering experiential learning on a personal level (Kolb, 1984). This article also outlines the limitations of the experiment, and includes several suggestions for further development of the drawing method in executive education. Future research could explore the possibilities of visualizing beyond the traditional written word, an approach that has dominated management research and education. Previous research has paid little attention to the use of drawing in the process of learning. This study is the first in the sphere of accounting education and research to take the approach seriously as a learning method.

2. Literature review

2.1. Criticism of post-graduate management education

The field of business education has increasingly attracted criticism (e.g., Asik-Dizdar 2015; Bennis & O'Toole 2005; Khurana, 2007; Mintzberg, 2004; Pfeffer & Fong, 2002). Henry Mitzberg's book, *Managers, Not MBAs* (2004) was one of the most influential in stirring up debate. He claimed that traditional classroom teaching is limited in its ability to teach real management, which is primarily a craft to be honed through experience. Others have also found a mismatch between the competencies provided by business education and those required in managerial work (David, David, David, 2011; Rubin & Dierdorff, 2009), which suggests management education responds poorly to the needs of practicing managers. More recently, Minocha et al. (2017) argue that the criticism of business education remains justified. They suggest that much business school pedagogy is based on academic theoretical content rather than on the context of management practice. The same study proposes the concept of practice intelligence, a blend of professional practice, knowledge, and the business organization context. This suggests that managerial problems and contexts should be taken as a starting point for learning, instead of academic contents and theory. This learner-centric approach is typically applied in executive education where participants are experienced managers studying part-time alongside their managerial responsibilities.

For MBA students, education is more than just a basic qualification and merely a direct instrument for financial gain. For example, it can play a transformational role in students' life stories (Ruth, 2017). Executive MBA programs attract participants with significant managerial experience studying part-time while working in their organizations, which often support their studies. Executive learners typically want more than illustrative and overly general examples. They want their learning to be connected to their work, helping them to improve in their own position and to develop their organizations. Carvin (2007) has outlined several characteristics that make executive teaching different from a conventional MBA education. He describes executive teaching as making more explicit efforts to draw out students' experiences, involving sharing problems they have encountered, and aligning learning with participants' managerial work.

When looking at management learning holistically, formal management education can be seen only as the tip of the learning iceberg, since most learning happens in the working context (Fox, 1997). A situated conceptualization of learning encourages a focus on the practice of management, such things as organizational characteristics, interactive collaboration with peers and power relations (Contu & Willmott, 2003). This in situ learning in the worlds of practice is essential in the context of executive education. This research positions itself in relation to a personalized learning approach, where the unique setting of each executive learner is taken into consideration in optimizing the learning process. The experiential learning model proposed by Kolb (1984) defines learning as a cyclical process where knowledge is created through the transformation of experience. This idea of learning relies on educators incorporating the experience and contexts of the participants into the learning process (Roglio & Light 2009; Ruane, 2016), and various methods have been put forward to do so. Currie and Knights (2003) emphasize establishing connections between the content taught and the managerial experience of MBA students through critical pedagogy. They suggest challenging the participants' assumptions regarding how their managerial context can form a basis for learning. Tushman, O'Reilly, Fenollosa, Kleinbaum & McGrath (2007) emphasize an action learning approach in executive education that leverages the experience of the participants, and they suggest that doing so could restore the legitimacy of business education.

2.2. Challenges of accounting education with experienced learners

In addition to postgraduate management education in general, a considerable amount of work has been done specifically on learning and teaching accounting. The accounting content of the MBA programs has been studied from the perspective of the amount of accounting offering and course requirements (Engstrom & Windal 1985) and exemption policies (Chewning & Spiller 1999). Böer (2000) reviewed management accounting education and stated that the accounting to be taught needs to change. He suggests that accounting books mainly present things that management accountants find interesting, instead of issues managers consider important in their work. Hermanson, Hermanson, & Alsup (1998) examined the accounting component in executive MBA (EMBA) programs in the USA. They found accounting was an important part of EMBA curricula but that the coverage of accounting material seemed fairly traditional. Cohen and Holder-Webb (2006) criticize accounting academics for favoring methodologies from the natural sciences, leading to a reduction in the practical relevance of accounting research and education.

In addition to the content focus, the pedagogical choices of accounting education have also been criticized. Accounting educators have raised concerns and reported the problems of teaching accounting in EMBA programs. Pastra (2009) wrote of his experience that teachers and EMBA students sometimes have different socially constructed understandings of what teaching and accounting are. The lack of explanations of why something is as it is in course design creates tensions with the preconceptions of adult executive learners. Pastra (2009) suggests that course facilitators should explain why course content, learning methods and assessment practices have been chosen so as to clarify for students how the choices were made to improve learning. Craig (2001) takes an even stronger stance by reporting an accounting teaching case from an EMBA course where students protested against the learning methods and a workload that they found overly demanding.

Rebele and St. Pierre (2015) state that accounting education research exhibits signs of stagnation, that it is merely describing the status quo and lacks any new contribution and impact on the practice of accounting education. It has been suggested that accounting education researchers should engage more with practitioners (Jones, 2017) and some research does offer responses to the observed challenges. Collett (2000) reports a teaching innovation where a project-based group work was trialed with full-time MBA students to increase the real-world relevance of the learning experience. Tucker (2017) reports the use of analogies to clarify accounting principles to MBA students and to help them engage with the conceptual underpinnings of accounting. Krom and Williams (2011) describe creative writing storytelling as a non-traditional tool in learning accounting. Cooper, Downer, and Faseruk (2013) introduced an integrative accounting course to improve the relevance and pedagogy of teaching accounting in MBA programs. They suggest accounting should be more integrated with and applied in real-life organizational and business settings. These previous approaches shift the learning emphasis from producing accounting information to how and in which contexts it should be used. However, they still focus on the accounting content of the teaching instead of adopting the student's managerial context as a starting point for learning accounting.

Overall, much of the existing research concentrates on conveying the challenges in postgraduate accounting education (Böer, 2000; Hermanson, Hermanson, & Alsup, 1998; Pastra, 2009; Craig, 2001) or suggesting various ways in which the teaching of the contents could be developed (Collett, 2000; Cooper et al., 2013; Carvin, 2007). There is little research on how the executive learners' working life and managerial area of responsibility could offer a starting point for learning. Some work exists on areas like the pedagogical value of reflection in postgraduate accounting education (Brown & Mccartney, 1998), suggesting that students can gain knowledge about themselves and their actions. How accounting is perceived by non-accounting managers, however, has been argued to be a rather unexplored area in research (Jönsson, 1998; Hall, 2010). What seems to be missing are pedagogical innovations tapping into executive learners' managerial work as a starting point for learning.

Studies on visual aspects and accounting are also rare yet they are increasing. Schadewald and Limberg (1992) experimented with using pictorial models to teach complex tax rules. Osgerby, Marriot, and Gee (2018) used visual metaphor with accounting students in the context of personal development planning. One interesting strand of accounting education research has examined concept mapping (Leauby, Szabat, & Maas, 2010; Leauby & Brazina, 1998; Greenberg & Wilner 2015). Concept maps provide a visual aid to make information about accounting concepts and the interrelationships between them easier to understand. Concept maps are aimed to benefit both students and teachers, taking however the teaching content perspective as a starting point. In a review of visual research in accounting, Davison (2015) concludes that research has lagged behind sophisticated visual business practices. In a similar vein, Quattrone (2009) states that accounting researchers have had the tendency to study accounting as numbers, texts, and discourse, but have not devoted enough time to exploring accounting as a producer of pictures and images. In addition to these critical observations, suggestions for further research on how practitioners use visual representations have been made. Garreau et al. (2015) states that using visuals has benefits in processing and conveying information, favoring holistic presentation and reifying social realities. Busco and Quattrone (2014) explored the power of the visual elements of the balanced scorecard. They suggest that further research is needed on the role of accounting visualizations in the construction of financial realities and the forms of understanding in the context of visual images.

This paper responds to the previously presented calls for research and aims to further our understanding through reporting on the use of visual representations in teaching accounting for practicing managers. Drawing is used as a novel pedagogical approach in exploring how participants' previous experiences, beliefs, and understandings (and becoming more aware of them) could be related to the learning process on a personal level.

3. Methods and data

3.1. Drawing as a method

Visual research methods are established practices in qualitative research and cover a range of approaches, including using images and videos, maps, illustrations, etc. However, they are used in reporting data more often than in collecting it from participants. Drawing, one of the approaches in visual methods where the visual data are generated by the respondents, has been used in several areas of study in social research (Mitchell, Theron, Stuart, Smith, & Campbell, 2011). Kearney and Hyle (2004) have examined the benefits of participant-produced drawings in the context of an educational institution from the participants' perspective. They suggest that using drawings can lead to a more succinct presentation of the participants' experiences, which is a conclusion echoed by Meyer (1991), who states that "people possess more complex, subtle, and useful cognitive maps of their organizations than they can verbalize." Stiles (2004) states that the use of pictorial representation is still, despite its potential, an underused approach in qualitative research. He suggests that images can be as valuable as words or numbers in exploring organizational contexts.

Zweifel and Van Wezemael (2012) have suggested that drawing could be used with interview data to improve the research process. Copeland and Agosto (2012) proposed using graphic elicitation in combination with techniques encouraging participants to provide other contextual explanations. Interviews rest on the assumption that it is the researcher that manages to approach the issue with meaningful questions (Denzin & Lincoln 1994). Introducing drawing to supplement a qualitative interview method offers interviewees an opportunity to outline the issue from their perspective and the chance to escape the linearity of the spoken word. A drawing produced by the interviewee can also be beneficial for the interviewer by triggering discussions, forming a map of the essential elements, making it easier to come back to those elements and to address their interrelations. Using drawing methodology in combination with interviews can help respondents become aware of their perceptions and beliefs and reveal thought processes that would not necessarily have been spoken. Previous studies point to findings that drawing is helpful in triangulating data using other methods and that drawing can be useful in eliciting data related to emotional experiences (Literat, 2013; Young & Barrett, 2001).

In addition to enhancing the interview process, drawing has been used in research settings where the respondents are not that able to express themselves verbally. Drawing has been suggested as an approach when studying complex organizational settings with various actors and fuzzy processes (Zweifel & Van Wezemael, 2012). In such settings, speech might be an insufficient way to present nonlinear contexts and the multidimensional relationships of various actors. Vince and Broussine (1996) asked middle managers to draw pictures that expressed their feelings about change in their organization. They concluded that the drawings led to learning and development by catalyzing the revelation of the unspoken. In a similar vein, Kantrowitz (2012) has described the act of drawing as "the creation of a physical space to play with our thoughts."

A few studies have used drawing in the context of professional development and learning. Producing visual representations has been used to highlight the learners' perspective. Bowen (2016) explored how internship students visually conceptualized the process of becoming professional in a work-integrated learning program. He used drawing in combination with interviews in understanding students' professional identity construction. Bryans and Mavin (2006) used participant-generated drawings to explore how business school researchers view the research learning process. They concluded that drawing pictures made the respondents more aware of their own thoughts and opinions. Han and Liang (2015) gathered visual data in addition to interviews by asking EMBA students to draw a graphic representation of their life and to reflect on their EMBA experience. Clarke and Holt (2017) used participant-generated drawings to examine how entrepreneurs used metaphor to make sense of their entrepreneurial identity. Their study has a similar focus as current research in that they also focus on the individual, exploring how the respondents themselves express their identity and understandings in their drawings.

Drawing as a qualitative research method does have some limitations. Some people might decline the invitation to draw images. It can be more challenging to engage with a drawing assignment than to express yourself with spoken words in an interview. People that are less accustomed and skillful in drawing might find participating in producing data more challenging, thereby reducing its quality. Visual data can also be challenging to analyze. Due to the risk of misinterpretation, especially if an analysis relies solely on isolated drawings, an analysis of the drawer's explanations adds reliability. This risk of misinterpretation when analyzing drawings alone partly explains why visual data are often used in combination with interview data.

Bell and Davison (2013) have reviewed the use of visual research methods in management studies and concluded that the use of visual methods is developing rapidly. They describe the potential of visual methods as part of a transition from the linguistic to the visual path in management studies. This study aims to contribute to this growing area of research by exploring drawing as an alternative to words and numbers in developing the understanding of organizations and their management. Much of the previous use of drawing methods concentrates on using it to supplement interviews (e.g., Bowen, 2016; Han & Liang, 2015; Zweifel & Van Wezemael, 2012). This paper aims to explore whether visualization of inner worldviews through drawing could provide an actual purpose for doing so, instead of merely supporting other data collection. By employing qualitative modes of enquiry, we attempt to illuminate the potential of drawing in management education.

This study is exploratory and interpretative in nature. The focus is on the individual respondents and the use of drawing in making their understandings of their managerial work context more explicit. This research setting is largely inspired by the phenomenological research tradition (Laverty, 2003), in which studies are concerned with understanding how the world is experienced (Manninen, 1995). By focusing on understanding the world from the perspective of those living in it, the paper seeks to approach the phenomenon without strong a priori assumptions, definitions or theoretical frameworks. Moreover, as in the phenomenological research traditions, after facilitating the visualization of the managerial contexts participants work within, this research sees the respondents as co-constructors of the interpretations of the study.

3.2. Drawing assignment and data analysis

The drawing assignment was introduced in an Executive MBA accounting course in Finland in the fall of 2017. The EMBA program in question was launched in 1989 and attracts experienced managers nationwide. More than 1000 students have completed the program, which is internationally accredited by the Association of MBAs (AMBA). The aim was to explore the use of drawing to illustrate participants' work from an accounting perspective. This places an emphasis on the selected participants' professional profile since the current work role is the necessity on which the visual representation is built. Background information about the participants was collected (including age, education, organization, job title, work experience in years and so on). The average age of the respondents was 43.5 years and they represented various fields of industries, including the public sector. All the participants in the EMBA accounting course in question were experienced managers studying part-time alongside their managerial work, so they were therefore eligible to be included in the experiment. Descriptive details of the participants are presented in Appendix 1.

The assignment was implemented at the very beginning of the accounting course, so that the accounting content taught would not affect the respondents' thinking. The respondents were not forewarned about the assignment. The assignment was separate from the official course completion requirements and course work and was not graded. The participants were guaranteed that their input would be anonymous. The time allotted for the drawing activity was 20 min. The researcher moved away from the respondents while they were drawing, but remained in the room. The assignment given to the respondents was to produce a drawing illustrating their managerial work from an accounting perspective. They did this individually without being influenced by others. They were told that the assignment would not be graded and that the purpose was to explore drawing as a method for thinking and learning. The explanation stressed that the aim was not to elicit skillfully crafted artistic drawings, but visualizations reflecting their view on their work from an accounting perspective. The respondents were provided with several sheets of paper, and they were permitted to make drafts or sketches if they chose to. In addition to the final illustration, the respondents were asked to provide further information about their drawing in writing.

Researchers had an essential role in facilitating the drawing assignment. Their role was to prepare the drawing instruction, which was given to students, supervise the exercise, collect drawings, analyze and interpret the drawings before the next seminar, determine categories for the drawings, and develop valuable frameworks for discussion. In this experiment, the researchers guided the drawing process as little as possible and therefore were careful even with the wording used in the classroom. For instance, we were careful not to use words that may have affected the drawings, thus we chose to avoid terms such as *customer*, *money*, and *leader* in the instructions. The aim was to examine how managers address an assignment like this, and how they visualize their work from an accounting perspective.

All the respondents produced drawings and provided further information in writing. No students expressed reluctance to participate in the experiment. This is probably explained by the profile of the participants and the general setting of the experiment. Executives are used to expressing themselves, and their work means they encounter surprising events far more demanding than this drawing exercise that require a response. In addition, participating in an education program makes them receptive to new experiences. Everybody understood the assignment and was willing to participate, and even excited by the prospect. In total, 20 illustrations were produced by the participants, collected by the researcher at the event, and later analyzed. Respondents were also asked to write briefly about their current managerial role and to describe their drawing in writing. These further contextual explanations were collected to make the analysis of the illustrations more profound and reliable (Copeland & Agosto, 2012).

This research utilizes an empirically driven visual elicitation approach (Bell & Davison, 2013) where the data are produced during the process. This research-initiated production of visual data and meanings (Pauwels, 2010) allowed rather contextualized material to be produced—in this case, managerial work from an accounting perspective. The data were analyzed using content analysis in the context of images (Franzosi, 2004), exploring qualitative patterns and themes (Silverman, 2001). The drawings were first examined to determine how they were constructed to express their message. The process was aided by utilizing the written descriptions of the drawings provided by the respondents. After researchers labeled the data with initial theme descriptions, the drawings were categorized according to how the managers approached the issue, rather than on the basis of a detailed analysis, including and omitting nuanced features in the drawings. Content analysis of the data was carried out as suggested by Merriman and Guerin (2006), as a qualitative exploration of what was drawn, as well as quantitatively examining how often particular themes or categories appeared.

The results were presented to the respondents a month later in order to acquire a better understanding of the illustrations. Review of the interpretations with participants (Hatch, 2002) addressed also questions and comments (thus offering a way for students to see how others have portrayed accounting), facilitating general discussion and offering ways to interpret drawings, and linking the ensuing discussion to contemporary accounting topics and frameworks. Moreover, this collective construal approach, where participants discussed the findings with the researchers to make more sense of the drawings, provided further understanding about the participants' experiences of the implementation and outcomes of the experiment. After this consensual validation with the respondents (Patton, 2002), the researchers analyzed the data once more and formulated the final results.

4. Results

4.1. Analysis of the drawings

In analyzing the data, we observed that almost all the respondents annotated their graphical illustrations (translations are added by the researchers to the pictures), in addition to providing a separate written description of their image, and those additional linguistic meanings enhanced the illustrations. However, the downside was that the annotations often revealed company names or logos, thus prohibiting the use of some of the pictures as public examples, on the grounds of the promised anonymity. The illustrations included in this paper are chosen to represent examples of the formed categories, while respecting the participants' anonymity. In some of the following pictures, names and/or logos of the companies are covered with a black box in order to guarantee the anonymity of the respondents.

We analyzed the drawings to discover patterns, allowing for the drawings to be assigned to three categories. The first category was illustrating the operations, where the main emphasis was on the visualization of business operations and organizational activities. These drawings presented essential actors and organizational entities related to the respondents' managerial responsibilities. Accounting was approached through the dynamics of respondents' managerial work and the activities and actors related to it. Managers aimed to illustrate essential operations, through which the financial outcomes of their work arise, as well as the stakeholders that affect that work. Managerial work, however, takes place in various organizational contexts. Managerial positions are diverse. Drawings in this category acted as a tool in presenting respondents' understandings about their managerial contexts and experiences. Drawing allowed simultaneous perceptions of different actors and relationships, making complex strings of interaction visible and tangible. Produced pictures outline managers' understanding of what constitutes building financial success in a variety of managerial work contexts. The drawings in this first category ("illustrating the operations") were typically constructed as illustrations of networks and actors. Customers were often included, as well as other stakeholders, thus the elements extended beyond organizational boundaries. Fig. 1 shows an example of this by placing the respondent in the middle and illustrating various actors and organizations that have an effect on the profitability of the business the respondent is responsible for.

Fig. 2 shows another example of the first category, showing how drawing was used to radially mind map and label various internal aspects (production, R&D, sales, and marketing) as well as things outside the organization (customers and partners). In addition, risk management and data analysis were mentioned. Six out of ten illustrations in the category of "illustrating

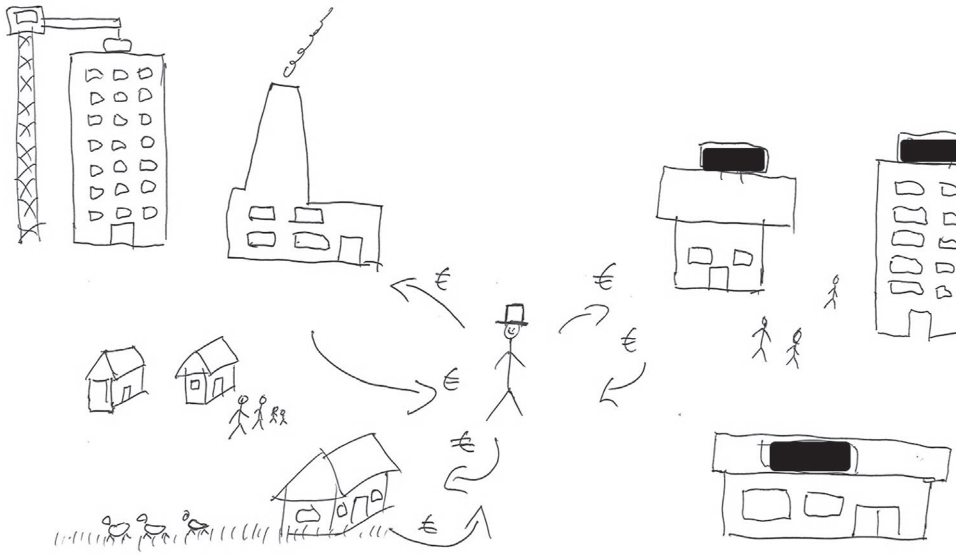

Fig. 1. Drawing by a director in the "illustrating the operations" category.

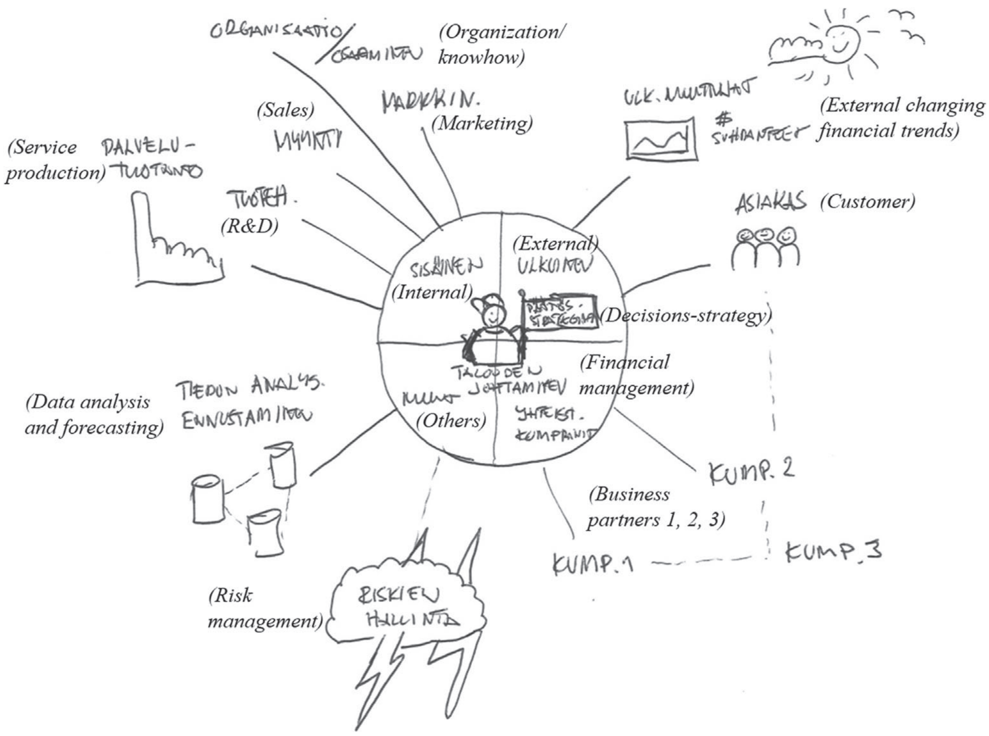

Fig. 2. Drawing by a business director in the "illustrating the operations" category.

the operations" presented the managers' approach this way, mapping different essential elements of their work and business.

Another distinctive approach in the "illustrating the operations" category was a more process-oriented presentation. Four of the ten drawings expressed their work from an accounting perspective like this. Instead of static lines connecting different elements as described before, these drawings included arrows illustrating movement and dynamics of the operations. Fig. 3 exemplifies the "illustrating the operations" category through presenting organizational and business activities in a dynamic manner.

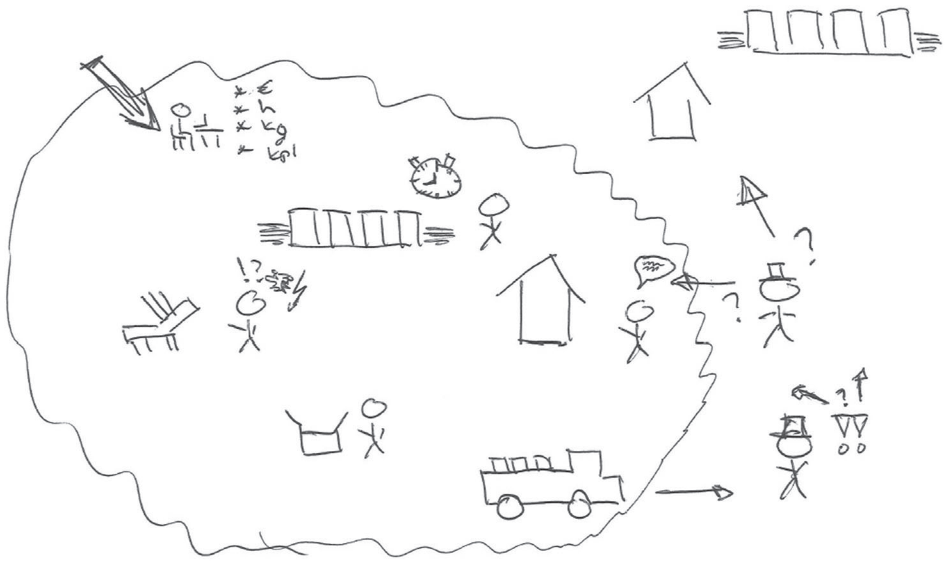

Fig. 3. Drawing by a CEO in the "illustrating the operations" category.

Fig. 4 in this category even resembles a process description, representing a series of actions undertaken to achieve certain outcomes.

The second category was "financial processes," which was applied to the illustrations of eight of the twenty respondents. The illustrations feature more conventional concepts of accounting, in that they describe aspects such as income, costs, cash flow, and the way that accounting issues are handled. Upon examining the drawings, two further subcategories emerged: Five of the drawings outlined the element of profitability in their work, often including extensive written textual information in the pictures. These respondents typically had a business profitability responsibility, meaning that they were accountable for generating revenues in addition to running operations cost-effectively. Fig. 5 presents an example of this kind of

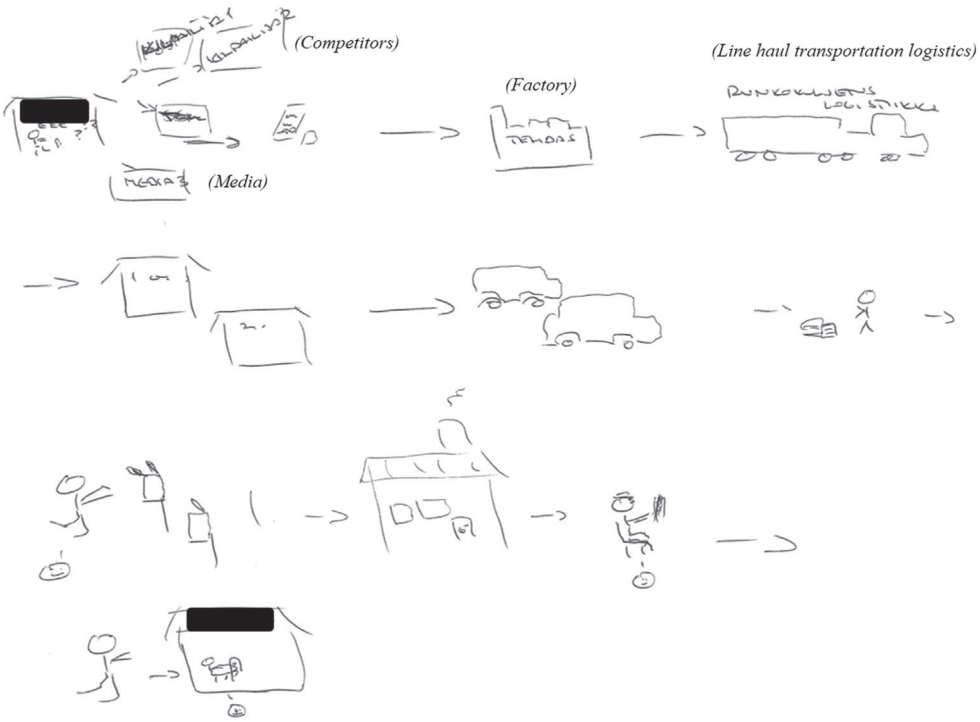

Fig. 4. Drawing by a director in the "illustrating the operations" category.

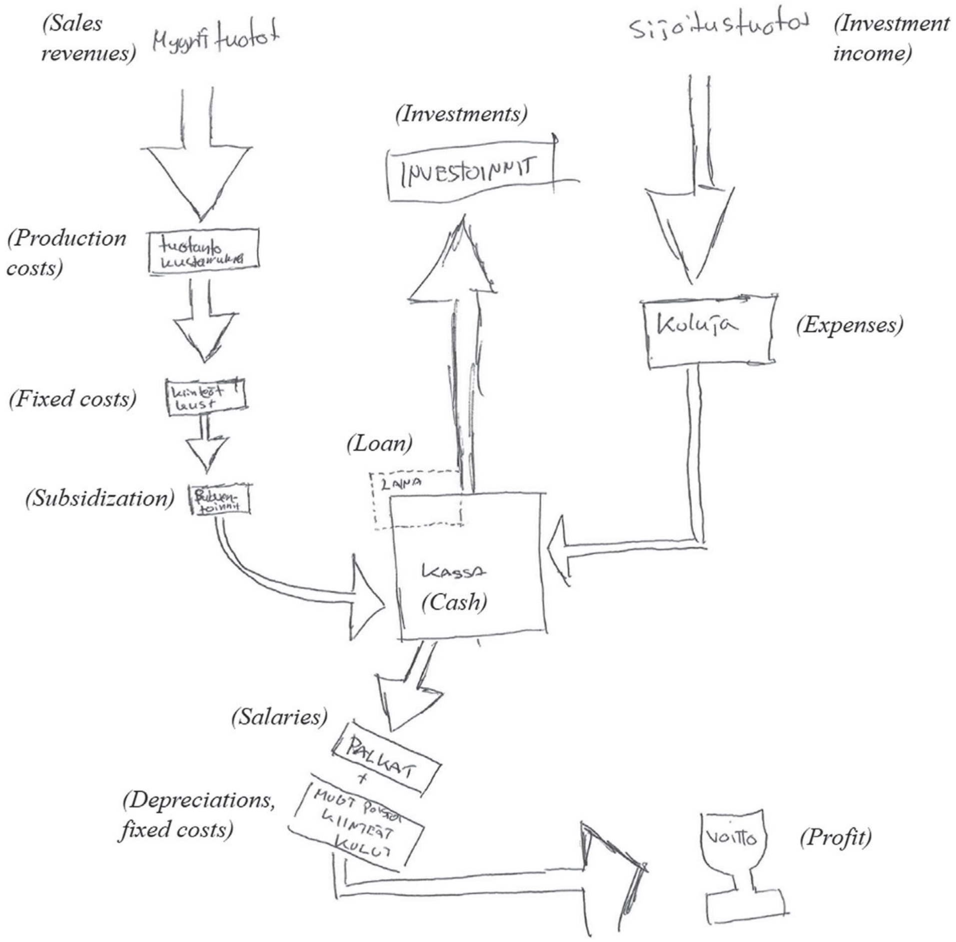

Fig. 5. Drawing by a director in the "financial processes" category.

approach. It illustrates how profit is constituted in the respondents' business, starting from income streams, allocating costs, cash and investments and leading to profit, which is represented by a trophy symbol.

Three illustrations in the "financial processes" category presented the ways in which accounting issues are addressed in the respondents' managerial work. Instead of presenting how profitability is constituted in their operations, these respondents illustrated a cyclical process of how financial issues are monitored and managed in their work. Fig. 6 presents an example of this.

Fig. 7 takes this approach to a more detailed level, illustrating an annual clock in which financial issues such as budgeting, invoicing, and expenses are dealt with throughout the year.

The third category of drawings included only two drawings, but they were nevertheless distinct from the previous categories. These two respondents approached the assignment by illustrating a drawing that we classified as a third category, "visual metaphor." These acted like figures of speech that helped to explain the idea that the respondents had related to accounting and their work. Fig. 8 presents an example of this. It shows the respondent in a rowing boat, aiming to move toward calm waters and sunshine, away from the storm. The respondent further described the drawing in a separate text description by stating that managerial work often feels like this, as involving a challenge to maneuver away from storms.

Both of the drawings in the "visual metaphors" category described managerial work as challenging and pressurized from an accounting perspective—a rather gloomy picture. If not downright pessimistic, these drawings were at least far from presenting a metaphor of wealth. They instead emphasized the challenges of making money in a business context and the pressure that doing so places on managerial work. Fig. 9 presents this by illustrating a scale, balancing factors that enable and restrain the manager achieving aspired financial business outcomes.

In addition to the previous three categories formed through qualitative content analysis, researchers conducted some additional analysis and observations. We examined whether some other aspects connected to the respondents were affecting the classification. Sex, age, educational background, or industry were not found to affect the outcomes.

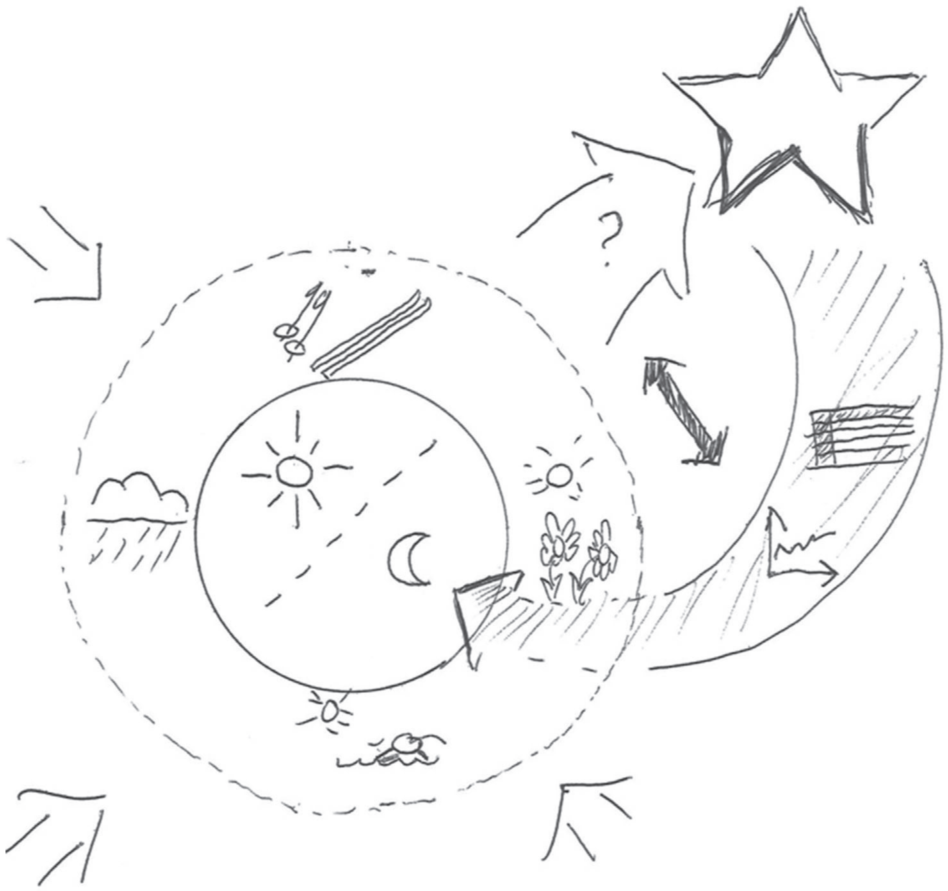

Fig. 6. Drawing by a director in the "financial processes" category.

4.2. Presenting the results and discussing with the participants

The month between producing the drawings and the follow-up discussion permitted the respondents to reflect upon the experiment. The results and their categorizations were presented to the respondents, and they discussed the findings in small groups before sharing them with the whole group. Respondents were also asked to discuss the idea of drawing as a learning assignment in small groups and as a whole group. The respondents seemed to be satisfied with how they had approached the assignment and nobody expressed a desire to radically change the structure of their drawing. However, several suggestions were made on how to refine the illustrations if given a second opportunity.

Some respondents felt that their visual presentation could be improved by prioritizing different elements, perhaps by drawing some elements larger than others. It was also suggested that a financial aspect could be attached to the illustrations, for example, by placing a rough estimate of revenues and costs with different elements in the pictures to illustrate the relative importance of different aspects. Another suggestion was that it would be beneficial if the illustrations included a reference to how managers allocated their time across different business activities and if interaction could also be included.

It was also suggested that in order to strengthen the learning aspect, one option could be to produce more than one drawing. In addition to drawing at the beginning of the course to make learning starting points explicit, a second drawing could be produced at the end of the course. It would then be interesting to observe how the illustrations differed in terms of how they reflect the development of the personal and managerial context-dependent understanding of accounting in their work.

A further suggestion was to utilize drawing after each course day. The drawing could be further modified and supplemented in several phases to include approaches from different lectures and materials as the course proceeded. Regarding the temporal extension of the assignment, it was seen that including a visionary aspect in the drawing could be useful as well. As goal-oriented managers, some participants suggested that drawing could be used to specifically illustrate the direction of the desired organizational development. Thus, drawings could progress beyond illustrating the status quo to present how things should be. That might mean drawing another picture to present a new selection of desirable stakeholders, to introduce novel elements regarding the operations and their profitability, and to amend an existing picture by prioritizing certain elements.

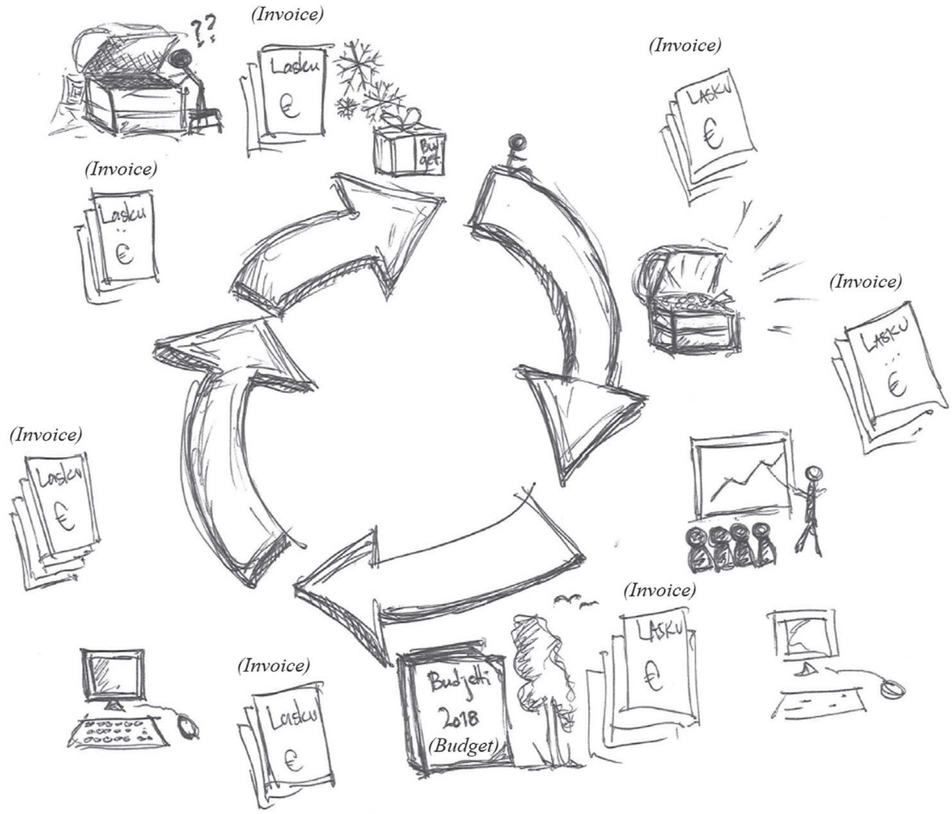

Fig. 7. Drawing by manager in the "financial processes" category.

Fig. 8. Drawing by a production director in the "visual metaphor" category.

Overall, the discussion on the findings with the participants added several perspectives to the understanding and further development of the drawing method experiment. In addition to the drawing assignment itself, the planned context of the experiment (in a current accounting course) also inevitably contributed to the extensive range of ideas from the participants. Between the initial drawing assignment and the presentation of the results and discussion, the participants had learned a

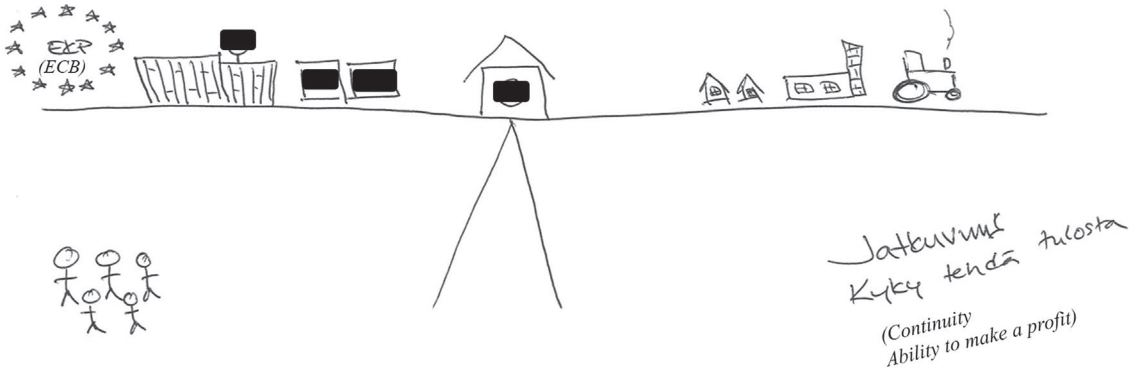

Fig. 9. Drawing by a director in the "visual metaphor" category.

range of accounting concepts throughout the course. Even though their ideas were mainly on how they could personally learn more via the drawing method, their ideas were likely influenced by their improved understanding of accounting in general. Overall, the participants were satisfied with the experiment and thought that it was useful in developing their understanding of accounting in the context of their managerial work. In addition to the drawing data, the ensuing discussion with the participants also proved to be beneficial in exploring the potential of participant-generated drawings in the context of accounting education.

5. Discussion

5.1. Conclusions about the drawing experiment

Existing research has mainly used drawings alongside interviews. We set out to explore whether drawing could be a valuable approach in itself for facilitating learning. The outcomes of the teaching innovation offer various implications suggesting that using visualization in executive education could open new avenues for learning. The use of drawings in an EMBA classroom created learning through personal experience when producing the drawing and in the process of sharing and discussing the outcomes within the course group.

Drawing encouraged EMBA students to reflect on their thinking from a new and somewhat surprising angle—accounting and drawing are not self-evident companions. Drawing required students to step out of their typical thinking. They were forced to conceptualize their understanding of their managerial work from an accounting perspective. Drawing requires that a person places illustrated elements in relation to each other, chooses which elements are most important and which less central, selects what to show and what to hide, and even outlines causal relationships between different elements. This exercise created a revealing setting for managers to see, in their own drawing, how they construct their reality around accounting. This experience opened routes for valuable reflections, which included the participants questioning whether their illustrations had really captured their understanding in a condensed form, whether—and if so why—they had left something out, why they viewed some elements as more important than others, and whether there was potential to view accounting and their roles as actors in a different way. Previous literature has outlined the distinctive characteristics of drawing compared to speech. Zweifel and Van Wezemael (2012) state that speech forces the speaker to tell a story in a linear way with causalities and hierarchies, whereas drawing allows a person to escape the one-dimensionality associated with the spoken word. The results of this research show that many of the respondents used drawing to exploit space as a second dimension of communication. The most common category—illustrating the operations—presented processes and managerial contexts with various actors and their relationships.

In addition, the collective construal approach, where the outcomes of the drawing exercise were discussed in a group, proved to be valuable. This was a learning experience where students saw how others had illustrated their understanding. By showing all the drawings to all the participants, we created a basis for a unique accounting discussion. Participants saw how others had approached accounting and how they perceived their role in their organizations. The experience was unique in two ways. First, the drawings opened a new perspective to see how others perceived their work from an accounting perspective. Second, drawings differ from chronological stories, in that drawings enable each participant to see the whole story of the others at the same time. In the ensuing discussion and reflection, we also offered ways to interpret different drawings. This is a unique setting in which to see how others portray the main elements of accounting and how a person's own depiction was different from or similar to the other pictures produced. Fig. 10 presents a summary of the drawings, showing the categories formed from the drawing data.

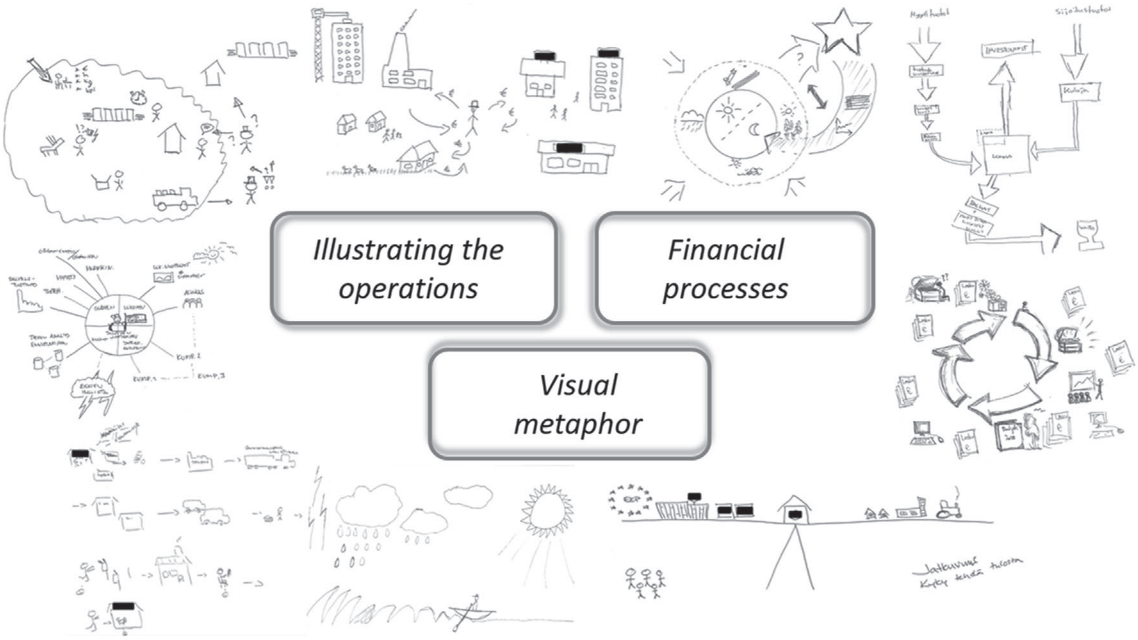

Fig. 10. Three perspectives the participants used to visualize accounting in their work.

5.2. Further use of the drawing method

Despite the encouraging outcomes of the drawing experiment, a critical evaluation of the results of this paper offer several suggestions for further use of the drawing method in accounting education. Since this is the first paper, to our knowledge, to report the use of drawing as a learning method in accounting, the suggestions are aimed at modifying the design of the drawing exercise in future use. The following observations are not a comprehensive list of improvements constituting one ideal way of implementing the drawing assignment. Instead, they are a collection of ideas to draw from when planning the use of drawing to improve the learning outcomes.

5.2.1. Designing the drawing assignment

When using participant-generated drawings to facilitate learning, the specific assignment given to students is an essential starting point. On this first occasion, we were careful not to guide the drawings in any way. Of course, this is only one perspective on how to use drawing. Various more directed assignments could alternatively be used. In our approach, we implemented the drawing assignment at the beginning of the course. We propose that the beginning of the course is an appropriate place for the assignment, or at least the first stage of it. Drawings can elicit the individual managerial contexts of students, illustrating the premises for learning accounting. However, although the instruction is well placed at the beginning of the course, with experienced managerial students the exact content of the instruction might be reconsidered. In EMBA studies, a typical aim is to strengthen the executive student's role as an active doer and manager in their organization. For this reason, it could be beneficial to advise the students to outline illustrations in a way that would emphasize their personal agency from an accounting perspective. The actor perspective could be strengthened by advising the students to place themselves in their drawing. A more focused briefing preceding the assignment could also promote more refined and informative drawings. This way the drawings could be more effective in portraying how a manager can enhance an organization's financial success and in outlining where the biggest potential for influence may lie. Even with the open-ended assignment we used this time, the drawings could be revisited and students encouraged to place themselves in their picture. Executive students should be able to illustrate specific areas where their actions would be most relevant to the financial success of the organization.

5.2.2. Implementing the drawing assignment

In addition to designing the initial assignment, how and where the drawing takes place should be carefully considered. On this occasion, the drawings were produced with a single-color ballpoint pen. Perhaps providing some additional colors could be useful to highlight certain elements in the drawings. In addition, the place where the drawing occurs might have an impact on the type of images produced. Allowing experienced managers to create the drawings independently outside of their formal professional context perhaps encourages deeper levels of reflection. It is essential that the students understand the drawing exercise as a genuine effort in enriching the learning experience. This requires trust and a positive learning culture in the educational setting to facilitate individual and collaborative learning. Drawing should not be considered as an exam or a test set by the teacher, but as an exploratory learning journey towards further understanding of accounting.

The temporal timespan of the use of the drawing method offers room for innovation. In this experiment, a drawing approach was used to illustrate the premises for personalized learning by highlighting participants' experiences, beliefs, and understandings of accounting. In this experiment, the respondents' feedback established their desire to develop their own drawing after the initial version. These various suggestions (prioritizing different elements, including the financial aspect, visualizing time allocation and interaction, producing more than one drawing, emphasizing the future in the picture) also convey the message that utilizing the drawing method in multiple stages could be beneficial.

5.2.3. Facilitation of learning through the produced illustrations

From a learning perspective, a session where the drawings are presented and discussed together is pivotal and could be utilized in many further ways. The collective discussion and reflection offers ways to interpret different drawings and the ways that students depict themselves as doers and actors from an accounting perspective. The process can be used to offer new opportunities for students to reflect on whether their own role as an actor in accounting appears to be such that they wish to continue. In addition, this session offers an opportunity for the teachers to address a variety of essential accounting issues from a managerial perspective, building on the students' drawings. Teachers have the opportunity to analyze the drawings in advance and prepare to highlight specific features in them and to position these perspectives within the accounting discipline. Additionally, the teacher can address different perspectives on accounting that were not evident in the pictures. Getting familiar with the students' professional context through the drawings and the ensuing joint discussion also connects the teachers with the participants. The practical arrangements of the group discussions could also be improved. For example, instead of the computer presentation slides that we used in this experiment to present the drawings, it might be valuable to prepare a bigger canvas or several canvasses of drawings. This improvement could enhance the learning experience—the experience of seeing the so-called whole picture provided by others at first glance. Here each student would see at a glance how others have visualized their work from an accounting perspective and, possibly more specifically, portrayed their position as an actor in the accounting realm in their organizations.

If the drawing exercise would play a larger and continuous role in the accounting course, personal feedback and reflection support for each student could be offered. The feedback could be based on the teacher's interpretation of the drawing and could highlight how that particular drawing constructs reality and how it is similar to and different from the reality portrayed in other drawings. Learners could further develop their drawings based on the individual feedback from the teacher, ideas gained from understanding other students' drawings and the lessons from the course content. Perhaps the visualizations could be used in discussing accounting issues in a new way also in one's own organization with various people in order to create common understanding and to find new ideas.

Overall, accounting educators should consider using drawing as the creation of a space where students can play with their thoughts outside the confines of their minds (Kantrowitz, 2012), to see their perceptions and understandings in visible form. Facilitating learning in this space opened by individual drawings is novel environment for teachers as well as learners.

5.3. Theoretical contribution and suggestions for further research

In addition to responding to the call to utilize pictorial representation more often in research (e.g., Stiles. 2004; Bell & Davison, 2013), and to explore the use of visuals in the context of accounting (Quattrone, 2009; Busco & Quattrone, 2014), the teaching experiment reported in this paper addressed a specific theorized, and methodologically located, problem. This research aimed to explore how the previous experiences, beliefs, and understandings of an executive student could be elicited and related to the learning process on a personal level. Despite the suggestion by several prominent scholars that executive learning should be more closely grounded in the managerial work of the participants (e.g. Ruth, 2017; Carvin, 2007; Fox, 1997; Contu & Willmott, 2003; Tushman, O'Reilly, Fenollosa, Kleinbaum, McGrath, 2007), there is little research on how the learner's experience should be utilized in formulating the learning journey. Additionally, engaging more with practitioners has been suggested to increase the relevance of accounting research and education (Jones, 2017; Cooper et al., 2013; Jönsson, 1998; Hall, 2010). This paper provides an example of how drawing can be used as an approach in personalized learning that is based on the learner's managerial work context. To date, visualizations have been proposed for use in accounting education in the form of concept maps as a way to make instruction or curriculum transparent to students (Greenberg & Wilner, 2015). However, they could also play a reverse role. The visualizations produced by students can be used to make their initial understandings of a topic more transparent. Visual representation allows a message to come across instantaneously and is immediately processed.

The results illustrate that practicing managers do not enter a learning setting without some experience of the topic (e.g., accounting issues in managerial work). It was noticeable that visualization triggers a sensemaking process of observation, reflection, and evaluation of one's situation (as suggested by Zweifel & Van Wezemael, 2012). Drawing can be used to make one's own perceptions of complex settings visible (see, e.g., Bryans & Mavin, 2006; Kantrowitz, 2012). This is connected to the idea of experiential learning (Kolb, 1984), which defines learning as "the process whereby knowledge is created through the transformation of experience." In this approach, all learning can be considered re-learning. Effective managerial learning should be about the manager becoming more aware of his or her previous understandings, examining beliefs, and integrating more refined perspectives into his/her managerial thinking. This study explored the potential for visualization in doing this and was the first in the accounting field to report on drawing as a learning method. The results of this study suggest that learning accounting from an executive's perspective can be seen as a need to frame the so-called big picture and to see one's managerial area of responsibility and its development through financial logic. Constituting this understanding should be seen as an ongoing process of constructing and interpreting the dynamics of building a successful business organization as well as of one's personal role in that setting.

Despite the potential offered by participant-generated drawings for education, certain theoretical and practical implications of the method set constraints on its role in the learning process. The chosen theoretical lens of experiential learning provides support for the drawing experiment reported in this paper to work in other settings, but it also defines the boundaries for those contexts. Experiential learning is, by definition, founded on the participant's previous experience. Illustrating managerial work from an accounting perspective is only possible for experienced managers, and even for them it is a demanding exercise. In turn, accounting as a discipline is often taught as a professional qualification for people without any prior experience of the topic. This implies that the learning experiment described in this paper is limited to experienced managers.

This study experimented on how drawing can create a feedback loop that can be used to respond to our ideas and understandings. However, one's previous understandings of accounting, which drawing can help a student become more aware of, should only be a starting point for further learning. Self-produced visual representation can frame a single conceptualization too prevalently and lead to over-commitment to one's pre-existing thinking. Information that supports and is consistent with pre-existing understanding is easily afforded greater priority (Tucker, 2017). This belief perseverance should be carefully considered in accounting education, especially with students who possess limited experience or prior instruction in accounting issues. Because prior understanding is influential, a balanced approach for teaching accounting to experienced managers is needed. The learning of accounting concepts and techniques should be based on more than students constructing their own knowledge and choosing their own learning goals. Although students' existing understandings of a topic are important, the theoretically coherent and logically articulated organization of the topics of instruction should also be considered beforehand (Samuel, 2018). In the case of accounting, a discipline with technical precision, postmodern teaching assuming a level of individual teaching and learning, poses a challenge. Miley and Read (2018) have recently addressed this problematics by describing prioritizing the individual learning experience, while remaining aware of the many constraints on the teaching of accounting, as postmodern pragmatism. This present paper addresses Miley and Read (2018) concern over how traditional teaching approaches fail to engage students by describing an innovative approach for drawing the premises for personalized learning.

The main limitation of this study is that it presents only outcomes that occurred through the process we selected. The drawings could have been made in various other ways and at other points in the course. The drawings were made at the beginning of the course, and then analyzed and discussed. More information could have been gained through further developing the illustrations after the analysis. The challenging and novel nature of drawing as a method for expressing oneself means the respondents were limited in producing data in comparison with more conventional working methods. In addition, the deliberately open-ended briefing preceding the assignment limited the depth of the produced data, because part of the dedicated time for the assignment was allocated to considering how to approach the task. One thing to consider when evaluating the results is that drawing as a method risks overgeneralizing the outputs of the more talented drawers, in a similar way that interview research can be biased toward responses from more articulate informants. Drawing aptitude varies from person to person, limiting the output of the research. This research suggests that in pursuit of personalized managerial learning, drawing can act as an effective tool, expanding the possibilities beyond the traditional written word.

Further research could examine in greater detail the previously described limitations and determine if drawing could address the challenges previously reported (Craig, 2001; Pastra, 2009) in teaching accounting to executive MBA students, thereby facilitating personal and organizational learning. Furthermore, we suggest the use of visualizations in organizational contexts as an important area for future research. In addition to self-evaluating and reflecting on personal understanding triggered by drawing, visualization can also aid the presentation of this understanding to others. When the entire organization is considered as a unit of analysis, verbal data might overwhelm people's information processing capabilities (Meyer, 1991), whereas using visuals might provide an opportunity for developing a collective understanding of a situation. Self-explanatory and convincing communication is essential in managerial work. We still lack empirical evidence of how practitioners develop sensemaking/giving practices by using visual representations (Meyer, Höllerer, Jancsary, Leeuwen, 2013). Visualizations produced by managers could be a novel approach in co-creating a common understanding of accounting issues in organizational contexts.

Different uses of visualizations (PowerPoint presentations, flipcharts, visual presentations of strategy, etc.) are ever more common in managerial work. This study used a drawing experiment to examine some of the pedagogical implications of introducing drawing as a learning method. We suggest that drawing offers a novel approach and a counterweight to the privileging of language, which has dominated management research and education. Visual expression is different from linguistic expression, which offers an impetus for its use in learning. If every thought or idea could simply be converted into multiple forms of expression, there would be no point in drawing. This offers an intriguing way of illustrating the premises for personalized learning. Drawing can be used in personalization for the learner though tailoring the instructional environment and by the learner, leading to stronger ownership of the learning. The second meaning of drawing—to pull (Pallasmaa, 2009)—points to the essential role of drawing in thinking and learning: to pull out, to reveal and record mental images.

Appendix A. Descriptive details of participants

	Job title	Field of industry	Age	Gender
1	Business director	ICT	42	M
2	CEO	Finance	41	M
3	Service director	Health care	45	F
4	Sales director	ICT	36	M
5	CEO	Retail	48	F
6	Sales manager	Manufacturing	50	M
7	Service manager	Health care	39	M
8	Sales director	Marketing Services	52	M
9	CEO	Retail	44	M
10	Leading expert	Health care	43	F
11	Production director	Energy	39	M
12	Director of administration	Finance	49	M
13	CFO	Services	43	M
14	Director	Education	41	F
15	Regional director	Finance	38	M
16	CEO	Manufacturing	39	M
17	Unit director	Finance	54	F
18	Group manager	Retail	35	M
19	Bank director	Finance	44	M
20	CEO	Media	48	M

References

Asik-Dizdar, O. (2015). To be or not to be... a profession: Management education and its discontents. *Journal of Education for Business, 90*, 443–450.
Bennis, W., & O'toole, J. (2005). How Business Schools lost their way. *Harvard Business Review*, 96–104.
Bell, E., & Davison, J. (2013). Visual management studies: Empirical and theoretical approaches. *International Journal of Management Reviews, 15*, 167–184.
Bryans, P., & Mavin, S. (2006). Visual images: A technique to surface conceptions of research and researchers. *Qualitative Research in Organizations and Management: An International Journal, 1*, 113–128.
Böer, G. (2000). Management accounting education: Yesterday, today, and tomorrow. *Issues in Accounting Education, 15*, 313–334.
Bowen, T. (2016). Depicting the possible self: Work-integrated learning students' narratives on learning to become a professional. *Asia-Pacific Journal of Cooperative Education, 17*, 399–411.
Busco, C., & Quattrone, P. (2014). Exploring how the balanced scorecard engages and unfolds: Articulating the visual power of accounting inscriptions. *Contemporary Accounting Research, 32*, 1236–1262.
Brown, R. B., & Mccartney, S. (1998). Using reflections in postgraduate accounting education. *Accounting Education, 7*, 123–137.
Carvin, D. A. (2007). Teaching executives and teaching MBAs: Reflections on the case method. *Academy of Management Learning & Education., 6*, 364–374.
Clarke, J., & Holt, R. (2017). Imagery of ad-venture: Understanding entrepreneurial identity through metaphor and drawing. *Journal of Business Venturing, 32*, 476–497.
Chewning, E. G., & Spiller, E. A. (1999). Validation of factors relevant to the exemption of accounting courses in MBA programs. *Journal of Accounting Education, 17*, 123–139.
Cohen, J. R., & Holder-Webb, L. L. (2006). Rethinking the influence of agency theory in the accounting academy. *Issues in Accounting Education, 21*, 17–30.
Contu, A., & Willmott, H. (2003). Re-embedding situatedness: The importance of power relations in learning theory. *Organization Science, 14*, 283–296.
Collett, N. J. (2000). Innovation or renovation: Effective project design for accounting and MBA students. *Accounting Education, 9*, 67–92.
Cooper, T., Downer, P., & Faseruk, A. (2013). Accounting education for MBA students: Beyond debits and credits. *The Journal of Contemporary Business Issues, 19*, 37–50.
Copeland, A. J., & Agosto, D. E. (2012). Diagrams and relational maps: The use of graphic elicitation techniques with interviewing for data collection, analysis, and display. *International Journal of Qualitative Methods, 11*, 513–533.
Currie, G., & Knights, G. (2003). Reflecting on a critical pedagogy in MBA education. *Management Learning, 34*, 27–49.
Craig, R. (2001). Surviving an executive MBA "riot". *Accounting Education, 10*, 325–327.
David, F. R., David, M. E., & David, F. R. (2011). What are business schools doing for business today?. *Business Horizons, 54*, 51–62.
Davison, J. (2015). Visualising accounting: An interdisciplinary review and synthesis. *Accounting and Business Research, 45*, 121–165.
Davison, J., & Warren, S. (2009). Imag[in]ing accounting and accountability. *Accounting, Auditing & Accountability Journal, 22*, 845–857.
Denzin, N. K., & Lincoln, Y. S. (1994). *Handbook of Qualitative Research*. Thousand Oaks, CA: Sage.
Engstrom, J. H., & Windal, F. W. (1985). !!
Kolb, D. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: PrenticeHall.
Krom, C. L., & Williams, S. V. (2011). Tell me a story: Using creative writing in introductory accounting courses to enhance and assess student learning. *Journal of Accounting Education, 29*, 234–249.
Laverty, S. M. (2003). Hermeneutic phenomenology and phenomenology: A comparison of historical and methodological considerations. *International Journal of Qualitative Methods*, 21–35.
Leauby, B. A., Szabat, K. A., & Maas, J. D. (2010). Concept mapping—An empirical study in introductory financial accounting. *Accounting Education, 19*, 279–300.
Leauby, B. A., & Brazina, P. (1998). Concept mapping: Potential uses in accounting education. *Journal of Accounting Education, 16*, 123–138.

Literat, I. (2013). "A pencil for your thoughts": Participatory drawing as a visual research method with children and youth. *International Journal of Qualitative Methods*, 84–98.
Manninen, A. (1995). The experience of knowledge in everyday accounting: A study of Finnish accounting managers. *European Accounting Review, 4*, 455–484.
Merriman, B., & Guerin, S. (2006). Using children's drawings as data in child-centred research. *The Irish Journal of Psychology, 27*, 48–57.
Meyer, A. D. (1991). Visual data in Organizational research. *Organization Science, 2*, 218–236.
Meyer, R. E., Höllerer, M. A., Jancsary, D. J., & Leeuwen, T. V. (2013). The visual dimension in organizing, organization, and organization research. Core ideas, developments, and promising avenues. *The Academy of Management Annals, 7*, 487–553.
Minocha, S., Reynolds, M., & Hristov, D. (2017). Developing imaginators not managers – How to flip the business school model. *The International Journal of Management Education, 15*, 481–489.
Mintzberg, H. (2004). *Managers not MBAs, A hard look at the soft practice of managing and management development*. London: Prentice Hall.
Miley, F., & Read, A. (2018). *Pragmatic postmodernism and engagement through the culture of continuous creativity*. Accounting Education.
Mitchell, C., Theron, L., Stuart, J., Smith, A., & Campbell, Z. (2011). Drawings as Research Method. In L. Theron, C. Mitchell, C. Mitchell, A. Smith, A. Smith, & J. Stuart (Eds.), *Picturing Research*. Sense Publishers.
Osgerby, J., Marriot, P., & Gee, M. (2018). Accounting students perceptions of using visual metaphor as part of personal development planning: An exploratory case study. *Accounting Education, 27*, 570–589.
Pallasmaa, J. (2009). *The Thinking Hand: Existential and Embodied Wisdom in Architecture*. Wiley.
Pastra, Y. (2009). The rules of the game: Teaching MBA students. *Accounting Education, 18*, 105–108.
Patton, M. Q. (2002). *Qualitative research & evaluation methods*. London: Sage Publications.
Pauwels, L. (2010). Visual sociology reframed: An analytical synthesis and discussion of visual methods in social and cultural research. *Sociological Methods & Research, 38*, 545–581.
Pfeffer, J., & Fong, C. T. (2002). The end of business schools? Less success than meets the eye. *Academy of Management Learning & Education, 1*, 78–95.
Purcell, A. T., & Gero, J. S. (1998). Drawings and the design process: A review of protocol studies in design and other disciplines and related research in cognitive psychology. *Design Studies, 19*, 389–430.
Quattrone, P. (2009). Books to be practiced: Memory, the power of the visual, and the success of accounting. *Accounting, Organizations and Society, 34*, 85–118.
Ravenscroft, S. P., Rebele, J. E., & St Pierre, K. (2008). The importance of accounting education research. *Journal of Accounting Education, 26*, 180–187.
Rebele, J. E., & St Pierre, K. E. (2015). Stagnation in accounting education research. *Journal of Accounting Education, 33*, 128–137.
Roglio, K. D. D., & Light, G. (2009). Executive MBA programs: The development of the reflective executive. *Academy of Management Learning and Education, 8*, 156–173.
Ruane, M. (2016). Action learning in postgraduate executive management education: An account of practice. *Action Learning; Research and Practice, 13*, 272–280.
Rubin, R. S., Dierdorff, E.C. (2009). How relevant is the MBA? Assessing the alignment of required curricula and required managerial competencies. Academy of Management Learning & Education, 8: 208–224.
Ruth, D. (2017). What is your MBA for? What is your story? *Management Learning, 48*, 7–22.
Samuel, S. (2018). A conceptual framework for teaching management accounting. *Journal of Accounting Education, 44*, 25–34.
Schadewald, M., & Limberg, S. (1992). Using pictorial models to teach complex tax rules: An experimental investigation. *Journal of Accounting Education, 10*, 133–149.
Silverman, D. (2001). *Interpreting Qualitative Data: Methods for Analysing Talk*. Text and Interaction: Sage Publications.
Stiles, D. R. (2004). Pictorial representation. In C. Cassell & G. Symon (Eds.), *Essential guide to qualitative methods in organizational research* (pp. 127–139). London, United Kingdom: Sage.
Tucker, B. P. (2017). Figuratively speaking: Analogies in the accounting classroom. *Accounting Education, 26*, 166–190.
Tushman, M. L., O'Reilly, C., Fenollosa, A., Kleinbaum, A. M., & McGrath, M. (2007). Relevance and rigor: Executive education as a lever in shaping practice and research. *Academy of Management learning & Education, 6*, 345–362.
Vince, R., & Broussine, M. (1996). Paradox, defense and attachment: Accessing and working with emotions and relations underlying organizational change. *Organization Studies, 17*, 1–21.
Young, L., & Barrett, H. (2001). Adapting visual methods: Action research with Kampala street children. *Area, 33*(2), 141–152.
Zweifel, C., & Van Wezemael, J. 2012. Drawing as a qualitative research tool: An approach to field work from a social complexity perspective. Tracey: Drawing and Visualisation Research, May 2012, Retrieved from http://www.lboro.ac.uk/microsites/sota/tracey/ journal/edu/2012/PDF/ Christina_Zweifel-TRACEY-Journal-DK-2012.pdf.