

# **IT IDENTITY CONSTRUCTION OF MANAGEMENT ACCOUNTANTS**

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**A MULTIPLE CASE STUDY ABOUT THE INFLUENCE OF  
DIGITALIZATION ON MANAGEMENT ACCOUNTANTS'  
IDENTITY**

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## **IT identity construction of Management Accountants: A multiple case study about the influence of digitalization on Management Accountants' identity**

### **Abstract:**

This paper examines how Management Accountants' IT identities are constructed in an organizational context. Current research claims that IT systems affect the role as well as the required skill set of Management Accountants and thereby change their occupational role to the forward-looking role of a "*Business Partner*" (Goretzki et al., 2013; Rikhardsson & Kraemmergaard, 2006; Becker & Heinzlmann, 2017). Nonetheless, it is unclear how Management Accountants adapt to the IT-driven change with only little research having been conducted within the Management Accounting domain from an identity point of view. Drawing upon a multiple case study with Management Accountants of five case organizations we aim to establish a clearer picture of how IT-related identities are constructed. Thereby Carter & Grover's (2015) concept of IT identity as well as Alvesson & Willmott's (2002) framework of identity work and regulation are the basis of our analysis. The empirical findings suggest that IT identity regulation is a key driver in the construction of Management Accountants' IT identity. We are able to highlight the prominent role of more senior Management Accountants who engage in managerial attempts to excerpt IT identity regulation via various tools. On the receiving end, in contrast to previous literature (Carter & Grover, 2015; Willmott, 1997) (more junior) Management Accountants are found to be receptive to managerial IT identity regulation attempts and engage in self-IT identity work as a result. Further, we find evidence that broader discourses, as well as cultural-communitarian attempts, influence the construction of Management Accountants' IT identities. Additionally, in some case companies the preconditions for micro-empowerment were fulfilled and Management Accountants engaged in quasi-autonomous self-IT identity work.

### **Keywords:**

Business Partner, Information Systems, Management Accounting, Role, Identity, IT identity, Identity work, Organizational control, Identity regulation

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# 1. Intro

“I work every day with SAP for several hours”, (IP12, Middle-level, ManufacturingCo).

“What I have seen in my own personal role is the kind of reliance on ERP systems” (IP7, Senior, Mechanical-engineeringCo).

This paper attempts to answer how the IT identities of Management Accountants are constructed. Management Accounting in this paper is defined to “measure, analyze, and report financial and non-financial information that helps managers make decisions to fulfill the goals of an organization” (Horngren, Datar, and Rajan 2012, 4). Carter & Grover (2015) introduce the concept of IT identity as “who am I in relation to IT” and “the degree to which the individual feels IT as integral to their sense of self”. The introductory quotes indicate that Management Accountants are dependent on the use of IT systems in their occupational role. According to Carter & Grover (2015), the dependence on IT implies that Management Accountants have IT identities.

Previous literature indicates that Management Accountants' way to become a “*Business Partner*” is facilitated by the introduction of Information Technology (“IT”) systems (Burns & Baldvinsdottir, 2005). In the same way, current research claims that IT systems affect the role as well as the required skill set of Management Accountants and thereby change their occupational role to the forward-looking role of a Business Partner (Goretzki et al., 2013; Rikhardsson & Kraemmergaard, 2006; Becker & Heinzelmann, 2017). However, it is unclear how Management Accountants adapt to the IT-driven change. Only little research within the Management Accounting domain has been conducted from an identity point of view in relation to IT. Research in this regard focused on IT as a “sense-giving” device for identity work (Heinzelmann, 2018). How Management Accountants actually engage in (IT) identity work and establish relationships to the systems they use on a regular basis has not been investigated yet. Based on a multiple-case study approach we show in a first step how the individual Management Accountant actively engages in self-IT identity work and in a second step show how senior employees and other factors actively trigger this self-IT identity work. Our analysis is based on Carter & Grover’s (2015) concept of IT identity and subsequently combined with Alvesson & Willmott’s (2002) framework of organizational identity regulation to analyze our empirics.

The contribution of this paper to previous research is to elevate the general discussion about the influence of IT on the Management Accounting profession to the construction of individual Management Accountants’ IT identities. Our empirical analysis suggests that IT identity regulation is a key driver in the construction of Management Accountants’ IT identities. As opposed to previous literature that focuses on how the individual is influenced by “the organization” (Heinzelmann, 2018; Carter & Grover, 2015; Jack & Kholeif, 2008) our research design allows for a more in-depth analysis of the dynamics

between different seniority levels in the construction of (IT) identity. Therefore, we are able to highlight the prominent role of more senior Management Accountants who engage in managerial attempts to excerpt IT identity regulation via various tools. On the receiving end, (more junior) Management Accountants are found to be receptive to managerial IT identity regulation attempts and engage in self-IT identity work as a result. This contrasts previous literature which hypothesizes that managerial interventions are limited because IT identity is a personal construct (Carter & Grover, 2015) and that managerial attempts may not facilitate learning, but might constrain the interaction of organizational members (i.e. (more junior) Management Accountants in our case) and might be demoralizing (Willmott, 1997). In addition to managerial attempts of IT identity regulation, our empirics provide evidence that broader discourses influence the construction of Management Accountants' IT identities as well. One form of broader discourses are cultural-communitarian attempts of IT identity regulation (i.e. a companies' heritage and affiliation to a certain industry), which impact the construction of IT identities directly and trigger self-IT identity work of Management Accountants. Another form of broader discourse are extra-organizational macro factors (i.e. universities, customers, competitors, etc.) which also drive self-IT identity work. Lastly, we observe that Management Accountants are generally engaged in IT-related topics. However, only if the preconditions for micro-emancipation as described by Alvesson & Willmott (2002) are fulfilled, Management Accountants are able to engage in self-IT identity work in a quasi-autonomous way.

In chapter two of this paper prior research is discussed and the frameworks of Carter & Grover (2015) and Alvesson & Willmott (2002) are introduced. Chapter three is concerned with our research design. Our empirical analysis is presented in chapter four and to conclude this paper the limitations of our study, the concluding discussion as well as suggestions for future research are presented in chapter five.

## 2. Theory

### 2.1. Domain theory

#### 2.1.1. Changing role of Management Accountants

Management Accountants' organizational role is a current and interesting topic in both academic research but also from a professional perspective (Goretzki et al., 2013). Research argues that the role thereby evolved from a so-called "*bean counter*" role (Baldvinsdottir et al., 2009) to a role that is characterized by being involved in decision-support or at least information provision for the operational management (Ezzamel & Burns, 2005; Järvenpää, 2007; Goretzki & Messner, 2018). As a consequence, the prior "backward-looking" view of the profession is changed to a more supportive and "forward-looking" view (Friedman and Lyne, 2001; Goretzki et al., 2013; Heinzelmann, 2017). The new occupational role that Management Accountants are ascribed to is therefore the "*Business Partner*" role (Goretzki et al., 2013; Morales and Lambert, 2013 in Heinzelmann, 2018).

Morales & Lambert (2013) adapt the concept of "*clean*" and "*dirty*" work (Hughes, 1951) to the profession of Management Accountants in an IT implementation context. They find that supporting activities for the Management are perceived as "*clean*" and desirable work, whereas standard tasks are perceived as "*dirty*" and undesirable work by Management Accountants. One main finding of Morales & Lambert's (2013) study is that Management Accountants face "*dirty work*" in their everyday working life as their actual tasks differ from their perceived self-image and occupational identity (Morales & Lambert, 2013). Further, Management Accountants' desired role includes close contact with Managers. However, this results in having to do "*dirty work*" for the Managers (Morales & Lambert, 2013). Heinzelmann (2018) interprets this as a "devaluation" of Management Accountants' "work and self-understanding". Surprisingly, the occupational identity of being decision supporters and Business Partners, is nonetheless preserved by Management Accountants which in turn calls for identity work (Ahrens & Chapman, 2000; Goretzki et al., 2013 in Heinzelmann, 2018). Heinzelmann (2018) further argues that this ambiguity of the new role of Management Accountants as Business Partner influences their occupational identity and thereby triggers identity work. Even more accentuated are the findings of Vaivio (1999) who in his case study observes that Management Accountants perform worse than the competing Sales professionals because of missing operational know-how and therefore, are not able to fulfill the envisaged role of a Business Partner. Not fulfilling the aspirational role, in turn, triggers identity work (Morales & Lambert, 2013).

In contrast, other studies find that in light of new IT systems, Management Accountants are able to position themselves as superior to competing professions with regards to

decision-making support (Whittington & Whipp, 1992; Burns & Baldvinsdottir, 2005). This superior position within the organization is actively safeguarded by blocking the access to technology for other professions and by creating an own culture around their profession (Whittington & Whipp, 1992). Other studies agree with this finding. Goretzki et al. (2013) conclude that Management Accountants increase their organizational importance by positioning themselves as a “gatekeeper” of the ERP system. Further research in this regard argues that Management Accountants are able to gain more organizational influence by a decentralization of their position into the operating departments (Järvenpää, 2007) or engaging in the creation of information asymmetries to increase their influence on decision making (Goretzki et al., 2018). The lined out literature indicates that the profession and thereby the single Management Accountant faces a dilemma regarding their unclear occupational identity (Heinzelmann, 2018). As this dilemma can be attributed to technological developments (Heinzelmann, 2018) it seems important to further understand the impact of IT on the individual Management Accountant and especially on how they adapt their identity regarding the changed circumstances.

Moreover, new IT systems do not only affect the power structures between different organizational functions but have a deep impact on Management Accountants’ fields of activity (Heinzelmann, 2017). The literature shows ambiguous outcomes when it comes to the changing occupational role through IT systems. On the one hand, prior research indicates a “hybridization” of tasks, i.e. an extension of responsibilities into assignments like IT maintenance (Becker & Heinzelmann, 2017; Caglio, 2003; Newman & Westrup, 2005). Other studies find a removal of standardized or routine tasks and the building of a more dynamic and foreseeing attitude (Sanchez-Rodriguez & Spraakman, 2012; Scapens & Jazayeri, 2003). On the other hand, Jack & Kholeif (2008) observe a “compression of tasks” for Management Accountants when an ERP system is introduced. This finding is in line with Dechow & Mouritsen (2005) who observe a shift of important tasks to the operational departments due to the implementation of a new IT system. Congruent with these outcomes is Newman & Westrup’s (2005) study which introduces the “technology power loop” to explain changing organizational roles in light of the introduction of a new IT system. They argue that the professional group that gains the most influence on new IT systems will in turn gain more organizational influence, which allows them to shape their existing role to the desired one (Newman & Westrup, 2005). The ambiguity of the role and organizational power shifts involved in role creation ask for a further understanding of what influence IT has on the individual Management Accountant.

But not only this ambiguity and the internal “fights” for the Business Partner role are influencing the individual Management Accountant. As found by Arnaboldi et al. (2017), Business Intelligence and Analytics systems (BI&A) allow individuals from other professions to carry out analyses that were previously performed by Management Accountants. This trend can be interpreted as a threat to the classical role of Management

Accountants as it is in strong contrast to a “hybridization” of tasks (Caglio, 2003). Another branch of research is observing the impact of BI&A systems on Management Accountants themselves (Bhimani & Willcocks, 2014). Bhimani & Willcocks (2014) illustrate the ambivalent impact of new technology on Management Accountants’ identity. On the one hand, the technology provides an opportunity for higher-level Management Accountants to further shape their identity towards becoming not only a support for Management decision-making but becoming a part of Management decision-making. On the other hand, junior-level Management Accountants face an inevitable identity threat and existence threat of being replaced by technology and becoming obsolete in the new ‘diamond shape’ of organizations (Bhimani & Willcocks, 2014). As Payne (2014) in this regard argues, this development might hurt the Management Accountants in the long run since individuals of the profession gain their business knowledge especially in the early stages of their career. Further, emerging professions like the Data Scientist fulfill similar role descriptions (Drew, 2018) and thereby increase the ambiguity of the role that Management Accountants have to fulfill. In this light, Heinzelmann (2018) interprets Morales & Lambert’s (2013) findings that this role ambiguity triggers identity work on the side of the Management Accountants in order to cope with the threat (Heinzelmann, 2018). The research topic that investigates the relationship between IT and identity work and the Management Accounting domain has until now not been touched upon but could add valuable insight on how IT shapes the self-understanding of Management Accountants and their work (Heinzelmann, 2018). Further, as shown above, IT has a big impact on the new role of Management Accountants, and therefore, it is crucial to understand how the relationship between Management Accountants and IT can be influenced. Elaborate studies in this regard have, from our viewpoint, at the moment not been conducted.

#### 2.1.2. Identity work

Current identity-related research with regards to the influence of IT on Management Accountants addressed the topic on a macro-level of the profession but rarely took the perspective of individual Management Accountants. Arguing for an individual perspective, the understanding of how Management Accountants engage in identity work and more specifically in identity work that is triggered by IT has to be further elaborated on.

Accounting research with the aim of getting insights into the identity construction with regards to IT is until now very limited (Boudreau et al., 2014). Yet, it is well established that general discourses have an influence or act as a regulating factor within identity work (Alvesson & Willmott, 2002; Goretzki et al., Working Paper). However, the focus of these studies is mostly connected to a macro perspective on the profession of Management Accounting or the implementation of a new IT system. We argue that the perspective of individual Management Accountants’ identity work might offer valuable insights into

how to steer the construction of IT-related identities and therefore can be valuable from a practitioner's perspective. In order to understand how individuals construct identities related to IT, we will describe the basic concept of identity work within Management Accounting and specifically for the individual Management Accountant in the following.

Within Giddens' (1991) concept of identity, "Who am I?" or in a broader context "Who are we?", are the main questions addressed and therefore relate to "the self as reflexively understood by the person" (Giddens, 1991, p. 53 in Goretzki et al., Working Paper). Brown (2015) accordingly describes a basic concept called identity work in an organizational context. This concept can be understood as "the range of activities individuals engage in to create, present, and sustain personal identities that are congruent with and supportive of the self-concept" (Snow & Anderson, 1987, p.1348 in Brown, 2015). Adding to the identity work, Ahrens & Chapman (2000) ascribe occupational identities to be key in understanding work-related identity building. Occupational identities, therefore, are dependent on both the "occupational group" an individual is working in and "tasks, responsibilities, and values" that are ascribed to the respective role (Goretzki et al., Working Paper). Occupational identities are social constructs in nature and consequently rely on external influences that can range from role expectations (occupational identity), expectations from superiors as well as broader discourse (Watson, 2008). Broader discourses in the Management Accounting domain can include recommendations or stigmatizations from "educational institutions, professional associations, books, movies or news" (Goretzki et al., Working Paper) that convey a picture of the role and therefore have an influence on the identity (Watson, 2008). Triggered by these influences, individuals consequently engage in identity work by "forming, repairing, maintaining, strengthening or revising" their sense of self (Sveningsson & Alvesson, 2003, p. 1165). Identity work can moreover be triggered in a "narrative" form (Watson, 2009) by self-reflection or by "interactions" with other members of the occupational group like meetings or interactions with superiors (Down & Reveley, 2009 in Goretzki et al., Working Paper). Connecting to our research topic of IT influences on the individual work-related identity it is therefore interesting to analyze how a broader discourse of digitalization, as well as personal experiences within the case companies, affect the identity work. In this regard, the concept of aspirational identity is interesting to study as identity work seems to be activated in times of changing roles (Goretzki et al., Working Paper). In line with the above stated, Morales & Lambert (2013) describe the activated identity work in the case of an IT-triggered change in occupational tasks. Concluding, we acknowledge previous research on identity work within the Accounting profession connected with the influence of IT on the occupational identity. However, we recognize a research gap to investigate the identity work of individual accountants in connection to (new) IT systems. Further research in this respect may shed light on Management Accountants' emotions and identity work in times of changing technology.

### 2.1.3. Connecting the IT domain with identity work

Many studies investigated IT and its relation to organizational changes for example during an IT system implementation but only a few connected the IT domain with the identity domain (Boudreau et al., 2014). Research that connected these two domains focused on how roles or practices have been affected by IT (Alvarez, 2008; Stein et al., 2013) or focused on the role of IT in identity creation for professional groups (Boudreau et al., 2014). Further research is concerned with the role of self-identity with technology acceptance (Lee et al. 2006) but misses direct impacts on identity work (Boudreau et al., 2014).

Another branch of research tries to view “IT as part of the self” (Jones & Karsten, 2008 in Carter & Grover, 2015) but is not connected to the professional/organizational context or to the Management Accounting profession. These studies nonetheless build concepts that allow us to further analyze the implementation of IT into self-identity. Schwarz & Chin (2007) for example show how individuals can bind themselves emotionally to an IT (Schwarz & Chin, 2007 in Carter & Grover, 2015). In their study, they try to show empirically how IT acceptance can be achieved for individuals. Further, Jones & Karsten (2008) try to illustrate that IT systems could be included in the identity-building process. The first conceptualization that attempts to answer the question “Who am I, in relation to technology?” was published by Carter & Grover in 2015. The concept is therefore called “*IT identity*” and attempts to create a framework that can be used to explain identity work related to IT on an individual level.

Adding to the discussion about the influence of IT on Management Accountants’ identity, Heinzelmann (2018) studied how occupational identities of individual Management Accountants are impacted by IT systems. His findings indicate that IT systems have a regulative impact on Management Accountants and thus influence their role behavior (Heinzelmann, 2018). In a second step Heinzelmann (2018) shows that IT “acts as a sense-giver” and therefore triggers identity work of Management Accountants. Combining Carter & Grover’s (2015) and Heinzelmann’s (2018) findings, we conclude and hypothesize that modern Management Accountants implement IT systems into their sense of self and into their occupational identity and therefore have to engage in IT identity work.

In order to test our hypothesis we conducted a cross sectional empirical case study amongst Management Accountants of different seniority levels to break down the general discussion regarding the impact of IT on the Management Accounting profession to an individual level. We want to investigate empirically how Management Accountants construct IT identities as described by Carter & Grover (2015) by answering the following research question:

***RQ: How are IT identities of Management Accountants constructed?***

Summarizing, we consider our proposed research to be complementary to existing literature and expand the domain of IT related research in the Management Accounting domain to the identity work of individual Management Accountants in relation to IT.

## 2.2. Method theory

In our analysis of Management Accountants' IT identity construction, we build upon the concept of IT identity that was first conceptualized in 2015 by Michelle Carter and Varun Grover. The concept builds upon the basic question "Who am I, in relation to technology?" and therefore adds to the basic concept of identity by taking human interaction with technology into account (Carter & Grover, 2015). Examples of such interactions can be found for instance by mobile navigation programs allowing for autonomy and therefore triggering a certain IT identity. The concept of IT identity will hence allow us to further understand and critically reflect how IT identities of Management Accountants are built within an organizational context and will be the underlying concept of analysis.

The authors see IT identity not as a dichotomous concept but rather as a multifaceted concept that critically reflects the question "to which extent a person views use of an IT as integral to his or her sense of self" (Carter & Grover, 2015 in Vaast & Pinsonneault, forthcoming in: MIS Quarterly). This argument goes hand in hand with the reasoning that people do not develop one single IT identity but rather a group of IT identities for specific technology they use. To simultaneously activate the IT identities in situations of more behavioral options (Burke & Stets, 2009), they are viewed hierarchically by individuals (Stets & Biga, 2003). This allows us to analyze an overall picture of the interplay of the identity concept combined with the influence of information technologies. Carter and Grover (2015), argue that information technology affects self-identity and can become part of it by adding IT capabilities like empowerment, accessibility or productivity to the sense of self. Self-identity is thereby defined as the solution to the question "Who am I?" (Vignoles et al., 2011 in Carter & Grover, 2015).

In order to assess the full picture of IT identity, Carter and Grover built a structured model that shows the influences and outcomes of human interaction with IT. Please refer to Figure 1 for an overview of the model. In the following, this model is presented in detail. In a first step we will line out the input factors of IT identity and, subsequently, will explain the respective outcomes.

The first influencing factors of the IT identity model are key characteristics of the used systems. This category is split in functionality, malleability, bandwidth as well as mobility of the used IT solutions. Thereby, functionality describes the number of occasions in which IT can be used, malleability describes the variety the single IT can be used in, bandwidth describes the range of possibilities this IT can be used to and mobility describes the ability to move location without having to change the setting of the IT. It is

suggested that these characteristics have a positive influence on the “*experience*” of IT and therefore will have an influence on the IT identity of the individual person (Carter & Grover, 2015).

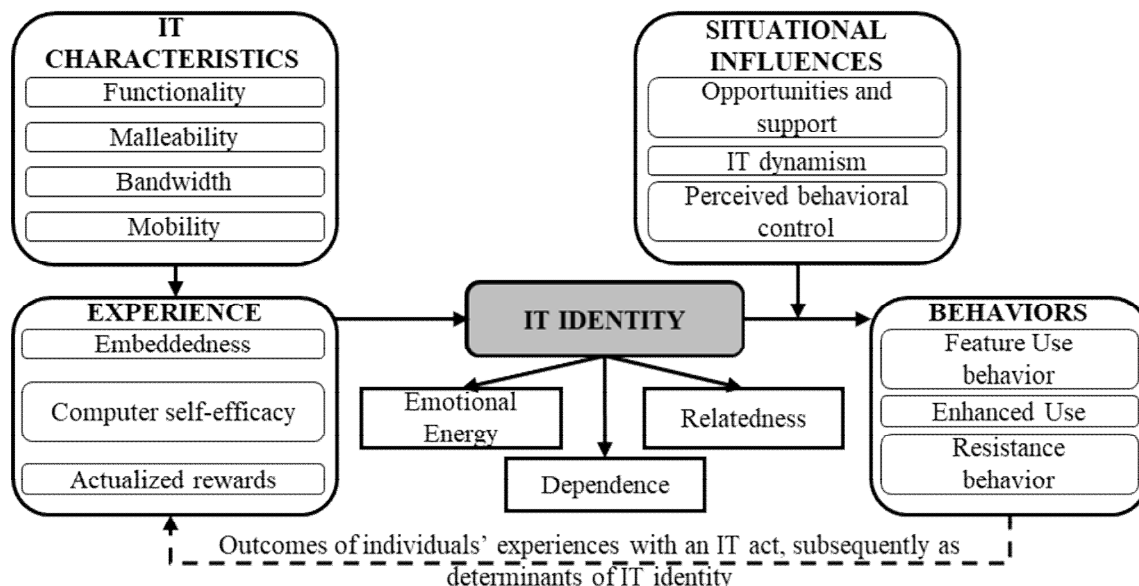


Figure 1: An initial theoretical model for IT identity (Carter & Grover, 2015)

Connected to this area, the experience with IT systems as the second pillar of the model, is suggested to have a direct and positive influence on IT identity as well. It is directly influenced by “*computer self-efficacy*”, “*actualized rewards*” as well as “*embeddedness*” (Carter & Grover, 2015). As Compeau (1999) argues, “Computer self-efficacy describes the individual beliefs of how the capabilities of computer usage are for the individuals. This directly connects to “*actualized rewards*” that describe positive but also negative feelings relating to the use of IT systems in the past. As a last determining factor of the above two, the model refers to the embeddedness of IT as the “use of a wide range of IT features, across a variety of situations” (Carter & Grover 2015). Concluding the model takes past interactions with IT into account and connects these to personal feelings to determine the IT identity.

As the next step in their model, Carter & Grover (2015) introduce situational influences like IT-related Opportunities & support, perceived behavioral control as well as IT dynamism (Carter & Grover, 2015). Opportunities & support can be summarized as actions carried out to teach individuals about an IT, infrastructural possibilities like availability of IT and support. Perceived behavioral control analyzes “the extent to which a person feels able to enact the behavior in accordance with IT identity” (Ajzen, 1991 in Carter & Grover, 2015). IT dynamism as the last influence describes the amount of IT feature changes of a certain IT. These influences, according to Carter & Grover, have a direct impact on an individuals’ behavior and therefore influence the IT identity.

From past interactions as well as the individual IT characteristics, the IT identity is built, and paired with situational influences like “*opportunities and support*”, leads to certain behaviors. These behaviors are classified into three categories i) feature use behaviors ii) enhanced use and iii) resistance behaviors (Carter & Grover, 2015). Feature use behaviors are thereby described as both the features of IT that are used and the number of situations IT is used in (Saga & Zmund, 1994). Enhanced use is further describing the use of before neglected features of a specific IT. Resistance behaviors on the other hand describe situations in which individuals react with resistance like complaints or inaction to new IT (Lapointe & Rivard, 2005). Following, a strong IT identity in relation to the target systems will trigger the feature use as well as an enhanced use of the target IT system, whereas a strong IT identity in relation to the existing IT will lead to user resistance (Carter & Grover, 2015). Like in a feedback loop this will again influence the experiences and thereby shape the IT identity.

In order to conceptualize IT identity, Carter & Grover included three dimensions in which IT identity manifests itself within an individual: Relatedness, Emotional Energy and Dependence. Relatedness thereby assesses the “extent to which an individual expresses feelings of connectedness when thinking about her- or himself in relation to an IT” (Carter & Grover, 2015). Emotional Energy evaluates how confidence, enthusiasm and energy are related to a certain IT when individuals think about it (Carter & Grover, 2015). As the last category, dependence measures the reliance on a certain IT that individuals develop. IT identity is therefore the result of the three dimensions outlined above.

As the authors argue, “IT identity is the degree to which the individual feels IT as integral to their sense of self” (Carter & Grover, 2015). The main influences are outlined above and relate to past experiences, situational influences as well as characteristics of the IT. IT identity construction is therefore a personal process, which is necessarily constrained by the social and cultural context. (Carter & Grover 2015). In this, we will add valuable insights to this model by combining it with identity work and identity regulation. As implied by Carter & Grover (2015), situational influences could be used to guide the construction of IT identity. This thought will in the following build the backbone of our analysis and will be combined with Alvesson & Willmott’s (2002) framework of identity regulation in organizations.

### 2.3. Theoretical framework

In our study, we will adapt the Alvesson & Willmott (2002) framework of identity work and identity regulation to closer look into how the IT identities of Management Accountants are constructed within an organizational context. We consider this necessary as the IT identity concept is too general to be adapted to an organizational context without framing it into a more “hands-on” framework. The identity regulation framework thereby helps in understanding the interplay of identity regulation, identity work and the self-

identity in this case in relation to changes in consequence to the use of IT (Alvesson & Willmott, 2002). Self-identity is thereby defined as the outcome of identity work within the narrative self (Alvesson & Willmott, 2002).

According to Ravasi & Canato (2013) research from an identity perspective in organizational settings is challenging but will allow us to dig deeper into a Management Accountant's and an Individual's self-understanding and how companies attempt to steer identities (Terrion & Ashforth, 2002 in Carter & Grover, 2015). We will in our study connect the basic idea of Alvesson & Willmott (2002) and adapt it to the interaction with IT. Consequently, we will use the terminology of “*IT identity regulation*”, “*self-IT identity work*” as well as “*IT identity*”.

The basic concept of Alvesson and Willmott (2002) is built upon three pillars: Self-identity, identity work and identity regulation. Figure 2 shows the interplay between these three pillars and illustrates how they influence each other (Alvesson & Willmott, 2002).

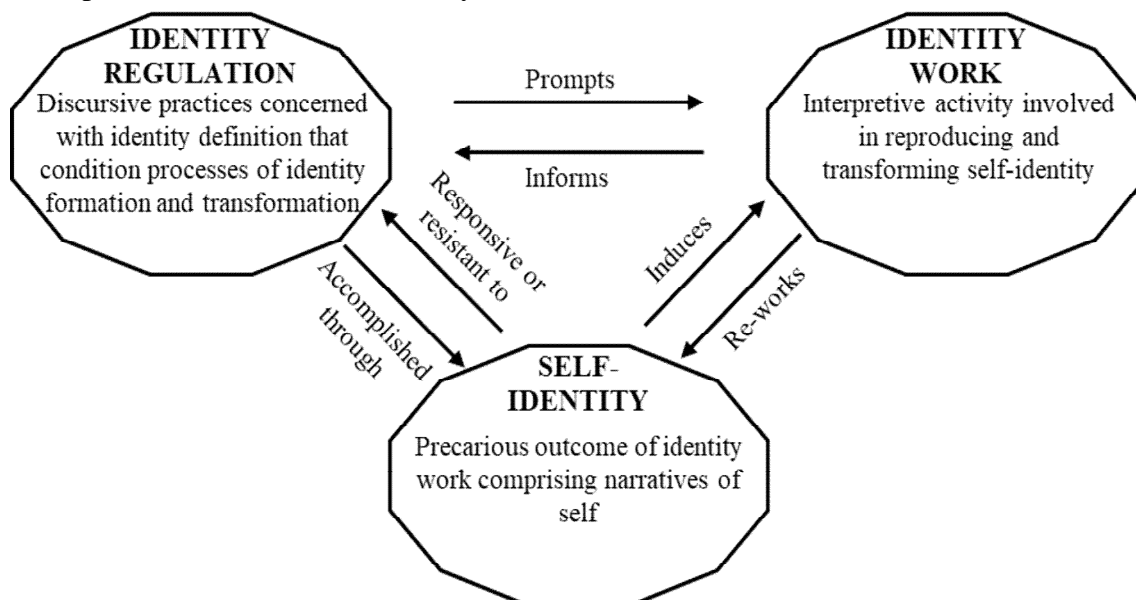


Figure 2: Identity regulation model by Alvesson & Willmott (2002)

The focus of the model thereby lies on the influence of organizational identity regulation and thus, how companies can influence the identity work of Individuals (Alvesson & Willmott, 2002). Alvesson and Willmott (2002) argue that identity regulation “*prompts*” identity work, which in a second step “*re-works*” the self-identity that again is either “*responsive*” or “*resistant*” to identity regulation (Alvesson & Willmott, 2002). The other way around they argue that identity regulation impacts the self-identity, which in consequence “*induces*” identity work which then “*informs*” identity regulation (Alvesson & Willmott, 2002). From this can be inferred that individuals influence identity regulation and vice versa (Heinzelmann, 2018). Combining the model with Carter & Grover’s (2015) concept of IT identity will allow us to gain valuable insights into how Individuals engage in identity work and therefore will allow us to analyze how IT identity is constructed by individuals themselves but also from an organizational perspective.

### 3. Method

The chapter will outline the research design and in the following describe the process of data collection and data analysis. In a last step, this chapter gives an overview of the companies that have been interviewed and lines out their main characteristics.

#### 3.1. Research design

In order to understand how the IT identity of Management Accountants is constructed, we conducted a multiple-case study. This approach seems appropriate in two distinct ways: i) as argued by Ridder (2017) case studies in general “investigate real-life phenomena in-depth and within the environmental context” and ii) multiple-case studies disclose cross-sectional patterns and allow us to factor out company cultural influences to understand individual patterns (Sanchez-Rodriguez & Spraakman, 2012). In this way, our approach will allow us to drive comparisons between different seniority levels and company-cultural backgrounds and thereby add to the existing research (Ridder, 2017). At the same time, our chosen approach of a multiple-case study allows us to in-depth analyze personal opinions and characteristics of individuals and minimizes the effects of biased answers. In our case, the real-life phenomenon we want to investigate is how Management Accountants construct their identities in regard to information technologies and what factors have to be included in understanding this process. By analyzing this process we can add to the existing research of IT identity by focusing on the Management Accountants individually and not on a profession-level. Taking into account that theory refining research is investigative in nature, a case study structure was chosen (Lillis & Mundy, 2005).

Previous research about the influences of IT on the identity has focused either on an organizational context (Heinzelmann, 2018) or focused on professions that are close to the Management Accounting Profession and closely related to IT infrastructure changes like the data scientist (Vaast & Pinsonneault, forthcoming in: MIS Quarterly). The focus of this study is the individual. Studying the individual Management Accountant in the context of the changing profession is not new, as there is a body of research that researched this field, e.g. Byrne & Pierce (2008). However, we add to this field of research by concentrating on the impact of IT and combining this with the relatively new idea of an IT identity (Carter & Grover, 2015). The decision to focus on the individual Management Accountant is in line with the chosen method theory because the concept of IT identity focuses on the single person (Carter & Grover, 2015). In order to achieve a high robustness in answering our RQ, we decided to interview a variety of companies. Having a robust set of underlying interviews from different Management Accountants, we believe that possibilities for extensive analysis are given (Yin, 2003). Having chosen a multiple-case study approach we are able to analyze the data not only in the company

context but also analyze differences and similarities across industries and countries which allows us to reduce individual biases (Yin, 2003 in Baxter & Jack, 2010). Further, the studied field of personal identity construction, allows us to draw longitudinal conclusions from individual storylines.

Generally, Researchers differentiate among four different designs of case-study research (Ridder, 2017). As prior research already explored the relationship between Management Accountants and IT systems (Heinzelmann, 2018) and first research in the IT identity construction of accounting-related professions has been conducted (Vaast & Pinsonneault, forthcoming in: *MIS Quarterly*), there are already theories to loosely base our research on. However, we see that within this literature the construction of IT-related identities within the field of Management Accounting has not been investigated (Vaast & Pinsonneault, forthcoming in: *MIS Quarterly*). Deriving from this, our study is based on this identified gap within the existing literature and from there derives our research question accordingly (Yin, 2003). Following Edmondson & McManus' (2007 in Ridder, 2017) approach, "the existing theories are extended to other groups or other contexts". In our case, we extend existing theories to individuals working in Management Accounting and thereby close an existing gap. In our analysis, we will follow a rather descriptive approach in order to introduce this topic to the reader in detail. This approach is chosen because there is no prior research in this area and the reader, therefore, has to be introduced to this topic (Edmondson & McManus, 2007). While analyzing the data, comparisons to the existing literature in the field of identity construction and the changing role of Management Accountants are drawn.

### 3.2. Data collection

The data used to answer our research question was mainly gathered through semi-structured interviews with individual Management Accountants. Semi-structured interviews thereby were planned in advance and open-ended questions were asked to the interviewees. According to Mathers, Fox, and Hunn (2000), semi-structured interviews are ideal for gathering "attitudinal information on a large scale". With this approach, we had the possibility to gather valuable insights of individual opinions. This approach is in line with our method theory of IT identity that strongly relies on personal opinions & feelings and connects well to the used theoretical framework of Alvesson & Willmott (2002) that, as outlined before, analyzes the identity construction of individuals. We therefore consider semi-structured interviews with open-ended questions allow us best to gather the required information. Interviews as the primary source of data were in a second step analyzed in light of complementing information like job announcements and confidential company presentations (Edmondson & McManus, 2007).

In total, 19 interviews with 20 individuals in five countries were conducted. The interviews were conducted via video calling software and lasted from c. 40 to c. 100

minutes each. We chose to use this service in order to comply with social distancing rules that applied during the study time. In order to still be able to observe facial reactions and feelings of the interviewees, we at all times turned on the camera. Further, due to this technology, we were able to widen the pool of possible interview partners and therefore conducted interviews in the U.S.A., Germany, the U.K., the Czech Republic and Sweden. The interviews were conducted with five different companies and a range of seniority levels of Management Accountants within each company. We assigned every interviewee to a seniority category ranging from Junior-level over Middle-level to Senior-level and Executive-level (Please refer to Appendix A for an overview of our interview partners). In order to have a representative overview, interviewees were chosen so that ten of them could be assigned to the Junior-to-middle-level (henceforth summarized as “*more junior*”) as well as ten could be assigned to the Senior-to-executive-level (henceforth summarized as “*more senior*”). This allows us to draw conclusions from seniority differences. To have a balanced approach and factor out possible gender biases, we chose to conduct interviews with eleven male and nine female Management Accountants. Interviews were conducted in a time frame of 5 weeks which allowed us to develop our questions and narrow down the focus. During the interviews, one researcher led the interview and worked through the question guide (see Appendix B), whereas the second researcher was taking notes and in case of interesting insights asked follow-up questions. All interviews were transcribed after the end of the interview. The case companies were consciously chosen from five different industries that were classified as following: Technology Company (“*TechCo*”), New-Tech Company (“*New-TechCo*”), Manufacturing Company (“*ManufacturingCo*”), Service Company (“*ServiceCo*”) and Mechanical-engineering Company (“*Mechanical-engineeringCo*”). This range of different industries allows us to draw conclusions about single industries but also validate more general findings of our study. In order to further avoid a selection bias at least three employees within every case company were interviewed (Collier & Mahoney, 1996; Byrne & Pierce, 2018). To respect confidentiality and constitute trust, we assigned pseudonyms to all interviewees and further clarified that no references will be made to other interviewees. Through this we tried to achieve more reliable and honest answers from the interviewees.

In order to have guidance during the interviews, we worked out a question guide with open-ended questions that would allow us to capture the main ideas. This is in line with Yin (2003) arguing that propositions are needed to successfully identify relevant information and not get lost in details. We believe that this approach has still let us a certain leeway to explore interesting individual topics but fixed this to our main domain. Minor adjustments have been made to the interviews depending on the seniority and the company of the respective interviewee.

### 3.3. Data analysis

After having completed an interview we immediately discussed the main findings and possible implications on our future interviews or our question guide. This is in line with Myers (2008) who argues that questions have to be amended to reflect the current status of the analyses. This means that the data collection and the data analysis were an ongoing iterative process that revealed new focus areas and interesting findings that were investigated in the following interviews and helped in further analyzing the already conducted interviews (Edmondson & McManus, 2007). This iterative process of conducting and developing the interviews was essential to recognize key insights and draw conclusions about different industries and seniority levels, especially with the background of a nascent research field (Edmondson & McManus, 2007).

Six of 20 interviews were conducted in German and in the following important findings and citations were translated taking into account language and socio-cultural differences of the interview languages German and English (Choi, Kushner, Mill & Lai, 2012). Thereafter, important findings were mapped into a matrix consisting of the main components of the Alvesson & Willmott (2002) framework to properly address our research question. Accordingly, we split our findings into “*self-IT identity work*”, “*IT identity regulation*” and “*Sources of IT identity regulation*”. During this process we recognized that certain findings could not be mapped within our current structure so that we added the category “*IT identity related empirics*”. In line with Williams & Moser (2009), we subsequently developed a coding tree (Please refer to Appendix C) in order to “assemble, categorize, and thematically sort” data. With advancing interviews we were able to further classify our findings more and more granularly and, with the help of our coding tree, build certain clusters within every column of our matrix. This presentation of our findings in a matrix structure helped us to effectively work with large amounts of data (Langley, 1999). In order to achieve a reasonable level of descriptive thickness later, we included stories within our matrix structure (Langley, 1999).

After having completed the interview process, we started to triangulate the observed patterns (Eisenhardt, 1989). Following Denzin (1978) we conducted two types of triangulation: investigator triangulation and data triangulation. In the first step we worked through the data and used the concept of investigator triangulation by discussing and analyzing the data with both researchers. With this process we achieved a de-biasing of the data and minimized wrong interpretations of the transcripts (Denzin, 1978). In the second step, we analyzed the data with help of data triangulation by combining the observed patterns and findings with other sources like company presentations to get a full picture of our empirics (Denzin, 1978; Lincoln & Guba, 1985). The combination of both methods aimed at generating the best possible interpretation and increasing the credibility of our findings (Lincoln & Guba, 1985). In a last step, findings that were essential to

answer our research question have been compared to existing literature (Baxter & Jack, 2010).

### 3.4. Case Companies

The next chapter aims at providing an overview of the case companies in order to better understand specific findings. As the Companies deviate a lot regarding which industries they operate in, we believe a wide range of industries adds not only value in understanding our findings but also adds to the research question by further clustering our findings.

#### *New-TechCo*

The Swedish corporation, New-TechCo, is a major player in the software and streaming industry. Main revenue sources are income from abonnements of the provided service as well as advertisement sales. Since the company is operating in a technologically focused industry and was founded in the mid 2000s, they have an advanced approach when it comes to using IT in the finance function. We define this company as a “*digital native*” company in line with Vodanovich et al’s. (2010) definition of individuals being “raised” with technological impacts. The Finance and Controlling function is located close to operations and is functioning as a partner to the operating business and included in business decisions, too. The main ERP-System is based on Oracle NetSuite, which is complemented with different BI-Tools as well as other integrated software solutions. In its approach to automate as much manual work as possible, New-TechCo is relying on UiPath as a provider for Robotic Process Automation (“RPA”). Employees therefore have the possibility to access “boot camps” to learn how to use this platform and learn how to code their own RPA-bots. Our interview partners were located in the U.S.A. as is the accounting function. Please see Appendix D for an overview of key metrics.

#### *TechCo*

The Swedish corporation, TechCo, is a worldwide leading provider for information and communication technology. Main business segments reach from internet technology over communication technology to telecommunication-related engineering services. Even though the company has its origin more than 140 years ago, TechCo is implementing the mindset of “being a tech company” into the controlling and finance function by continuously driving innovation in every segment. The finance and controlling function is located on top of the organization, tracking the group as a whole. Operational influence on decision-making is therefore rather small. The main ERP System is a 15-year-old SAP that covers around 98% of the company and has been continuously developed. Currently, a new implementation project is carried out replacing this old SAP system with a new and better integrated ERP system. Additionally, TechCo is using different BI-Tools as well as an RPA-coding platform for its employees. As seen in New-TechCo this company offers training to get to know RPA-coding, too. Our interview partners were located in Sweden, as is the group control function. Please see Appendix D for an overview of key metrics.

### *ManufacturingCo.*

The Swiss/German company, ManufacturingCo, is operating in the production and development of heating-, cooling- and clean-air-solutions. The company is part of the “german mittelstand” and has its origins more than 100 years ago. ManufacturingCo's finance and controlling function is, typically for this segment, located on top of the organization with only a minor impact on the operational decision making. The ERP system is SAP combined with QlikSense as a BI-tool that automatically generates reports for the management. Compared to other functions, relatively many tasks are still to be made manually. Automation is made not by employees but bought from providers. Our interview partners were located in Germany and were part of the German operations. Please see Appendix D for an overview of key metrics.

### *ServiceCo.*

The German company, ServiceCo, is operating in the facility service sector and was established through a carve-out of parts of a German conglomerate by a PE-firm. The Company therefore did not have any IT infrastructure and had to implement a completely new structure. The ERP system is a SAP System combined with a cloud solution and different BI-tools that are continuously developed. The main target of this structure was to achieve the best possible transparency. The finance and controlling function is located on top of the company and has relatively little impact on operational decision-making even though they monitor reported numbers on a monthly basis and provide feedback to the operational personnel. Automation in this company is rather limited and not planned in the next few years. Our interview partners were located in Germany and were part of the Group controlling function. Please see Appendix D for an overview of key metrics.

### *Mechanical-engineeringCo*

The Swedish company, Mechanical-engineeringCo, is a leading company in the vacuum and compressor business. Main revenue is generated with industrial air compressors. Even though Mechanical-engineeringCo is both 140 years old and operating in a very old-fashioned industry, technologization is driven through the whole company. With personal development being implemented in the company mindset, Mechanical-engineeringCo seems to have a culture of adaptation and development. The ERP system is fragmented and is linked together through a group consolidation system. Mechanical-engineeringCo is currently carrying out an implementation program to reduce the number of current ERP systems to below 20 and thereby achieve better data quality. Generally, the company is built up decentralized with accounting having little influence on decision making but only monitoring numbers on an aggregated group level. Additionally, the company is using different BI-Tools as well as an RPA-coding platform for its employees. Our interview partners were located in Sweden, U.K. and the Czech Republic, and were part of the group finance function, business controlling, and a finance innovation hub. Please refer to Appendix D for an overview of key metrics.

## 4. Empirics

Within the outlined setting, we will in the following investigate the RQ with the help of our empirical findings. The analysis is divided into four separate chapters, each investigating a different aspect of IT identity construction.

### 4.1. Self-IT identity work

As outlined in section 2.3 Theoretical framework, Alvesson & Willmott (2002) developed a framework to analyze identity work and identity regulation in an organizational context. In the following, we will use the framework to assess the adapted concept of self-IT identity work. Thereby we narrow down the concept of Alvesson & Willmott to the level of an individual Management Accountant and combine it with the IT identity concept of Carter & Grover (2015). By lining out “ways of constructing and exploring identity” (Alvesson & Willmott, 2002) we will in the following show empirically how Management Accountants in our case companies pursue self-IT identity work.

In order to understand how IT identity is regulated it is in a first step important to understand the way individuals conduct self-identity-work. Alvesson & Willmott (2002) therefore base their analysis on the following interrelated ways of self-identity-construction: “*Central life interest*”, “*Coherence*”, “*Distinctiveness*”, “*Direction*”, “*Positive / social values*” and “*self-awareness*”. In the following the six ways of identity work will be the basis for our analysis and will be subsequently expanded by factors that lead to strong / weak IT identity and certain strategies that we regard as important within the self-IT identity work of Management Accountants.

#### 4.1.1. Central life interest

“*Central life interest*” examines the basic question “Who am I” and is in the work context usually answered by “professional or occupational affiliation or organizational position” (Alvesson & Willmott, 2002). Adapted to self-IT identity work this results in the main question of “Who am I in relation to IT” which is in fact one of the main questions of the IT identity concept by Carter & Grover (2015). Consequently, this paragraph will address the question of what actions individual Management Accountants undertake to engage in self-IT identity work and thereby establish IT identities. We therefore clustered our findings into two main categories that allow for a higher granularity of our analysis.

##### *Self-IT identity work through personal interest*

We argue that personal interest has a big impact on answering the question of how IT relates to one's own identity. Additionally, as argued by Lapointe and Rivard (2005), a lack of interest towards IT can lead to a weak or even negative IT identity. In our analysis personal interest to engage in IT can be clearly seen on all seniority levels. IP6 (Senior,

Mechanical-engineeringCo) is a good example of how personal interest triggers self-IT identity work even if the extensive use of IT is not part of his job profile anymore.

“If I really have a lot of time, I still have the RPA automation software installed that normally the automation team is working with but sometimes I like to try it to learn a bit more about it” (IP6, Senior, Mechanical-engineeringCo)

We argue that the use and the exploration of new ideas clearly indicate an incorporation of this specific IT into his identity and therefore it can be interpreted as a way to conduct self-IT identity work. The personal interest can further manifest itself in other ways, too. As outlined by IP7 (Senior, Mechanical-engineeringCo), individuals use and deepen personal interests in order to satisfy other interests. In this case IP7 actively engaged in process automation and participated in “one of the first successful [Software] rollouts” and concluded that “I think that's why I'm VP now”. This is in line with Aron et al. 's (2003) study on self-expansion. Therefore it can be inferred that IP7's willingness to engage with IT is triggered by her will to “increase personal and social resources” (Aron et al., 2003). Further, in line with Bhattacharjee (2001), positive past experiences with an IT indicate satisfaction and thereby “*actualized rewards*” within Carter & Grover's (2015) analysis which subsequently shapes IT identity. We conclude from this, that personal interest is used in different ways to achieve personal satisfaction and therefore is an essential part of self-IT identity work.

#### *Self-IT identity work through outside pressure*

This cluster aims to provide insights into self-IT identity work that relate to personal interests towards technology but are indirectly triggered by outside pressure. We argue that self-IT identity work can be activated by indirect pressure that individuals feel and therefore start to work towards their personal interests. In our empirical study, we find evidence for Management Accountants being “naturally curious” (IP19, Junior, New-TechCo) people questioning themselves and “learning to adapt (...) when there is a roadblock in the way” in order to “find a way to work around” (IP19, Junior, New-TechCo). IP19 in this case described this process as “satisfying once I figured it out on my own” which shows that personal interest in combination with obstacles will lead to a process of self-IT identity work. This reaction is in line with what Bagayogo et. al (2014) described as “*enhanced use behavior*” and shows an increased IT identity towards an IT by using features that have not been used before (Carter & Grover, 2015). Furthermore, IP4 (Senior, New-TechCo) argues that when getting into a situation where current procedures reach their limits or she is just not satisfied, “you educate yourself and just try to get used to it more or less” indicating that self-IT identity work is triggered by changed outside situations or dissatisfaction with existing procedures. We were able to observe an even more pronounced finding regarding the “feelings and ideas about basic identity concerns and qualities” (Alvesson & Willmott, 2002). Asked about if she feels pressured by market and industry developments, IP19 answered that she does not feel pressured per

se but acts in line with her personal interests by educating herself in topics she believes are important for future success.

“This is why I'm trying to learn how to code, learn how to do queries, learn how to build bots and things like that. If I know that my stuff can be automated at some point, it's on me to learn the automations or learn how to analyze data” (IP19, Junior, New-TechCo).

This behavior is in line with the self-expansion concept as she is willing to engage in self-IT identity work in order to be prepared with what she believes to be important for her individual future (Aron et al., 2003).

Concluding, individuals actively engage in self-IT identity work based on both their central life interest and because of outside pressure. Thus, central life interest is an important aspect of self-IT identity work that has to be considered when analyzing the construction of IT identities.

#### 4.1.2. Coherence

“*Coherence*” in identity-work describes a “sense of continuity and recognizability over time and situation” (Alvesson & Willmott, 2002). It takes into account prior experiences and lines out a certain corridor in which self-IT identity work can be carried out. We argue that Management Accountants accordingly take already existing and established “old IT identities” to verify new IT’s and thereby engage in self-IT identity work. Empirically we see that IP13 regularly used his own excel model during transition phases because he “trusts his model more” (IP13, Middle-level, ServiceCo). This behavior infers that he takes old experiences into account to actively work on his IT identity for the new IT system. When the newly implemented system is reaffirmed by his own model, the self-IT identity process is started, making the new system part of his identity. Therefore, it is important that systems are “beneficial, implemented carefully, tested for errors and are always working” (IP13, Middle-level, ServiceCo).

As Carter & Grover (2015) argue, a strong IT identity towards an existing system can lead to resistance behavior of the individual. We observed that Management Accountants used the old systems either actively to build and verify a new IT identity towards the new system or actively worked around the new system with the help of the existing system. The second case is in line with the resistance behavior that is outlined by Carter & Grover (2015) and the “creative workaround” that is introduced by Alvarez (2008). Our empirical findings suggest that in such cases the Management Accountants have to be, as IP13 phrased it, “forced” to use the new System. We argue that in both cases old IT systems serve as a means for active self-IT identity work regarding new systems. As outlined by IP4 (Senior, New-TechCo), Management Accountants “normally have a parallel run for most systems” showing that a control of new systems with old ones acts as a part of active self-IT identity work.

#### 4.1.3. Distinctiveness

“*Distinctiveness*” takes into account that individuals or groups are different from others and thereby conduct identity work. With our domain of IT identity, we regard distinctiveness as self-IT identity work that is carried out as a consequence of being different to either colleagues and other professions or on a macro level to other companies or industries. The first evidence for this was found by IP15 lining out the process of implementing a German subsidiary into the IT landscape. While talking about this process she recognized that her new German colleagues had a different set of IT identities and she did not understand how they cannot understand “how things are technologically done in Mechanical-engineeringCo” (IP15, Middle-level, Mechanical-engineering). This made IP15 realize that she defined herself differently from others by reflecting upon her IT-related identities. We argue that IP15 implicitly categorized Mechanical-engineeringCo as “IT elite” and thus, triggered self-IT identity work in herself.

On a macro-level, we saw that the same argumentation holds for companies, too. As IP3 lined out, whole companies define themselves as different from others and thereby make their employees engage in self-IT identity work.

“I mean, we are a software company, so we have an advantage, you know. I find that to be the most immediate and direct impact to my life or my job” (IP3, Senior, New-TechCo).

This quote indicates that individuals identify with the company they are working for and therefore, triggered by the company’s heritage and mindset, engage in self-IT identity work. This finding is essential for understanding how individuals build their identity in relation to IT as it infers that group building and mindset are important building blocks for self-IT identity. With this finding, we are able to add an organizational viewpoint to Carter & Grover’s (2015) model by combining it with Alvesson & Willmott’s (2002) theory that focuses on an organizational perspective.

#### 4.1.4. Direction

“*Direction*” within identity work describes what is appropriate or valued to achieve a certain subject or state (Alvesson & Willmott, 2002). In the context of organizations, we regard this subject or state to be for example to reach a high hierarchy level as soon as possible. This implies certain “routes to appear more reasonable than others” (Alvesson & Willmott, 2002). As Beach & Mitchell (1987) argue, decision-making is further highly dependent on the self-image an individual has. In our study, we found that IT knowledge is a key element of Management Accountants’ self-image. Combining these ideas, “*direction*” in self-IT identity-building refers to the created role identity, meaning the “expectations about what it means to be competent in (the) role” (Burke & Stets, 2009 in Carter & Grover, 2015), and therefore implies that working on ones’ IT knowledge is reasonable in order to achieve the envisioned state.

Analyzing our empirical data we found that individuals, in line with Beach & Mitchell's (1987) reasoning, seem to make decisions based on their self-image of being "definitely an accountant" but adapting to "the changing and evolving business world" by gaining "important IT experience that is only going to be beneficial over time" (IP20, Junior, New-TechCo). Adding to this, IP19 stated the importance of the future career when executing decision making by saying that active engagement in IT developments within the finance function will "just help you in your career and help in how to work with [IT] later on" (IP19, Junior, New-TechCo). Therefore, we conclude that Management Accountants actively engage in self-IT identity work to pursue the envisaged career and to correspond to their envisaged self-image (Aron et al., 2003).

#### 4.1.5. Positive / social values

This form of identity work is focused on how aspirational identities and connected positive values are shaping the identity work of individuals (Alvesson & Willmott, 2002; Thornborrow & Brown, 2009). Adding to this, others that are seen as comparable and do not fulfill the aspired for criteria are often described negatively (Turner, 1984). We argue that "*positive / social values*" are connected to the dimension of emotional energy (Carter & Grover, 2015) as individuals seem to connect emotional energy to IT systems, which constitutes one dimension of IT identity.

In our empirical analysis, we find strong evidence that individuals strive for aspirational IT identities to build their own IT identity.

"This is why I'm trying to learn how to code, learn how to do queries, learn how to build bots and things like that" (IP19, Junior, New-TechCo).

This quote indicates the aspirational identity of a Management Accountant that is highly skilled in advanced IT systems and therefore serves as a point of comparison. This in a second step activates self-esteem-driven self-IT identity work and in our opinion shows how Management Accountants use aspirational identities as reference points for their future development. Not only individual goals are used to motivate self-IT identity work but also aspirational organizational roles are. Accordingly, IP16 (Middle-level, Mechanical-engineeringCo) illustrated how "IT is supporting the finance organization [to] becoming a true Business Partner".

The second outcome of our analysis regards the self-IT identity work by describing comparable Management Accountants with non-desirable skills and/or attitudes negatively (Turner, 1984). IP7 states that she "hate[s] people that say [that they have] always done it like this and [that it has] always worked in the past" and thereby she also adds her aspirational identity with regard to IT of that time by connecting it to the new ERP system.

“I think when I saw SAP I immediately knew that it would be better, so I engaged in it” (IP7, Senior, Mechanical-engineeringCo)

IP7 clearly describes her self-image of being an IT affine person positively compared to her peers that do not engage in new technologies. She thereby reinforces her aspirational identity and by this actively engages in self-IT identity work. The negative connotation towards her peer group, therefore, acts as a backup for her decision of engaging in new technologies (Beach & Mitchell, 1987). Concluding, we find that IT identity work can be dependent on aspirational identities and is reinforced by creating a picture of an “enemy” (Turner, 1984).

#### 4.1.6. Self-awareness

Self-awareness is the last form of an individual’s identity work described by Alvesson and Willmott (2002). They argue that self-consciousness and the “awareness of self-identity” per se act as a channel of how individuals think and value (Hassard et al., 2000 in Alvesson & Willmott, 2002). Self-identity is defined according to Giddens (1991) as “reflexively organized narrative derived from participation in competing discourses and various experiences” (Giddens, 1991 in Alvesson & Willmott, 2002). Self-awareness therefore builds on past experiences and beliefs and from this derives the aspirational identity. In our empirical analysis we found that the main driver for self-awareness-related self-IT identity work is the change of the Management Accounting role as a consequence of a further digitalization of the finance/accounting function (Scapens & Jazayeri, 2003). A large sample of interview partners argued that the changing market is a driving force of their motivation to engage into new technologies. We see this as a clear sign for self-IT identity work. IP20 stated that he “definitely identifies [...] as an accountant” but at the same time recognizes that his profession is “changing and evolving” and therefore, he actively engages in self-IT identity work. This shows his awareness for the changing role and skill set that accountants are expected to have (Rikhardsson & Kraemmergaard, 2006; Becker & Heinzlmann, 2017). This view is brought up even more pronounced by IP6 (Senior, Mechanical-engineeringCo).

“Because of that [his awareness of new skills that are needed] I moved a bit from accounting to this more technology-based work. And then you can read a lot of these things that accountants will disappear in the next ten years and I really do think so” (IP6, Senior, Mechanical-engineeringCo).

From this statement and our interview we see that IP6 actively took past experiences but also media recommendations, the general discourse about the profession etc. into account and engaged in self-IT identity work. This is in line with Goretzki et al. (Working paper) who argue that identity work is triggered by a broad discussion about the Accounting function in relation to IT. Self-awareness is therefore an important tool for self-IT identity

work and has to be considered when addressing the IT identity construction of Management Accountants.

#### 4.1.7. Coping strategies

Alvesson & Willmott (2002) conducted their study based on above described factors to analyze an individuals' identity work. This framework was created to analyze the general interplay of identity work, identity regulation and self-identity in an organizational context. Since the topic of this research paper is concerned with the construction of IT identities, we found other forms of (IT) identity work that do not fit in any of the given categories. Thus, we will introduce additional forms of self-IT identity work in chapters 4.1.7 and 4.1.8 to provide a more thorough analysis.

In light of research pointing to a disruptive technological change within the finance and accounting function (Bhimani & Willcocks, 2014), we found only little empirical evidence that Management Accountants feared this development. Therefore, we hypothesize that self-IT identity work must include a self-regulative component that allows Management Accountants to build a comfort zone within the current occupational identity. This finding is in line with Nach & Lejeune (2010) who found that managers develop strategies to react to sudden technological changes. Analyzing our interviews in regard to this topic, we were able to identify different coping strategies that we clustered into two different categories: Time horizon and accounting skills. In our opinion, these strategies are used and needed by individuals to actively engage in self-IT identity work even though there is a potentially identity threatening change in the industry (Marrone & Hazelton, 2019). We argue that Management Accountants in most of the observed cases have a positive IT identity towards the IT systems they are currently using. In line with Carter & Grover (2015), one dimension of IT identity is emotional energy. Thus, Management Accountants connect emotional energy to IT systems. Therefore, we hypothesize that in order to maintain this positive emotional energy, Management Accountants develop coping strategies to engage in self-IT identity work and form a positive emotional energy.

The time horizon of an anticipated change plays an essential role in the self-IT identity work. The Management Accountants seem to recognize that the role will change and their skill set has to adapt accordingly. We therefore argue that they create a comfort zone by pushing the change to an undefined future to cope with this potential threat. IP19 (Junior, New-TechCo) in fact stated that she "can envision" that her "job will be automated in the future, just not now because there are so many [organizational] changes" (IP19, Junior, New-TechCo). From this we infer that in order to build their IT identity in time of disruptive change, Management Accountants develop a strategy to account for this uncertainty by pushing the threat to an undefined future and during this time change their skill-set (please refer to positive/ social values for IP19's comment about her changing

skill set). Other employees agreed with this finding by stating that “there is something there, but I think we are years away from that” (IP4, Senior, New-TechCo).

Management Accountants’ confidence that companies will need profound accounting skills in the future is the second identified coping mechanism that they use when being confronted with further digitalization. We therefore argue that they build a comfort zone by highlighting their accounting knowledge as irreplaceable by systems. Evidence for this behavior can be found in IP7 stating that “it very much needs someone who knows accounting and who knows the business” (IP7, Senior, Mechanical-engineering). This shows that IP7 is recognizing digitalization as something that has to be worked on but at the same time the accounting knowledge is used to create security during this change. IP14 shows an even more pronounced coping mechanism by stating:

“The people who will continue to have jobs and will continue to thrive are the people who can design those AI systems right. And you need accountants who are trained accountants in order to do that, and so I don't think that it's necessarily a threat to me by any means. Like I think it's what I do. It's what I specialize in, right?” (IP14, Middle-level, New-TechCo)

IP14 develops his own idea of an accounting profession that solely deals with implementing accounting into new systems. Further, we find evidence that Management Accountants actively transfer the threat to other occupational roles like the bookkeepers and thereby again build a comfort zone for their occupation. In this regard IP17 (Junior-level, ServiceCo) argued that “bookkeepers will be replaced by automated systems, but we [Management Accountants] will not be replaced as we do analysing activities that cannot be replaced by machines”. Accordingly, we argue that Management Accountants engage in self-IT identity work by developing coping strategies that allow them to maintain a positive emotional energy even in the light of potential threats on their profession due to technological advances.

#### 4.1.8. Factors that lead to a strong or weak IT identity

Another important determinant of self-IT identity work not described by Alvesson & Willmott (2002) are crucial factors we found which determine whether Management Accountants develop a strong or weak IT identity to a specific IT system. We recommend that these factors should be taken into account by organizations in order to allow for successful IT change-related processes and in order to construct or reshape IT identities. This observation is in line with Carter & Grover (2015) who include “*IT characteristics*” within their framework as an IT identity shaping element.

Essential components that have to be given within new systems in order to be accepted by Management Accountants are the user interface and the ease of use. As stated by IP4 a user-friendly interface is important to build a positive IT identity for a new system.

“I definitely am reluctant to use [System xyz]. The user interface is not user-friendly, everyone in the business complains about it and it's hard to remember how to use it so that we work around it.” (IP4, Senior, New-TechCo)

As this quote shows, user-unfriendly systems can lead to resistance behavior as outlined by Carter & Grover (2015) and therefore prevent the Management Accountant from building a positive IT identity towards a new system. Further, we argue that characteristics like an appealing and understandable user interface as well as easiness of use represent IT characteristics (Carter & Grover, 2015) and therefore influence the IT identity.

The second crucial factor in order to allow for the construction of an IT identity towards a system we identified is reliability and stability. We found that Management Accountants have a strong desire for excellent data quality and therefore engage in procedures to secure this. As outlined by IP13, reliability is one of the key factors for building an IT identity towards a system.

“You lose them [Management Accountants] when they spot a mistake that a new system made. They might already have a certain aversion towards new systems and if then an error occurs you will lose them” (IP13, Middle-level, ServiceCo).

Possible difficulties with a new system will therefore lead to Management Accountants working around the new system or creating a weak or negative IT identity to it. In extreme cases the implementation of new systems can also lead to Management Accountants leaving the Company. As explained by IP4 “If people have been resistant to new systems, they do not stick with New-TechCo and move on because it's too stressful for them”. This empirical finding in fact extends and confirms Goretzki et al. (Working Paper) who found data scientists to leave their organization in case of a “persistent mismatch” of self-identity and tasks.

Connecting and extending the second factor we argue that the rollout of a system is also an important step in order to create a positive IT identity towards the system. The empirical data shows that systems have to be “introduced in a good way” (IP16, Senior, Mechanical-engineering) in order to be accepted by Management Accountants. IP13 (Middle-level, Service Co.) further argues that a new IT system has to “be always tested extensively before it is implemented so that no errors occur”.

As the last factor for successful IT identity creation we regard the respective value proposition of new IT systems for Management Accountants as essential. As argued by IP6 (Senior, Mechanical-engineering) Management Accounts “need to see benefits” from new implementations as they will otherwise not accept the change. A positive example that clearly added value for the finance function can be found in ManufacturingCo. As stated by IP11:

“We have been so overloaded before the new ERP implementation that we were really happy about the new system” (IP11, Middle-level, ManufacturingCo)

From this statement we infer that a given value proposition can add to the construction of a positive IT identity.

Developing from our factor-related findings we hypothesize that Management Accountants can be expected to react in four distinct ways in case of a new implementation of an IT system.

1. If the new IT system meets the requirements of ease of use, reliability, efficient roll-out and adds value, the individual is likely to build a strong IT identity towards the new system.
2. If the new IT system is essential in everyday work, the individual is likely to adopt the IT system even if the above characteristics are not given but will develop a weak IT identity towards the system.
3. If the new IT system is essential for carrying out the work but the individual cannot develop an IT identity related to the system it is possible that they quit the job (in line with Goretzki et al., Working Paper).
4. If the new IT system is not essential, the individual is likely to not adopt the IT system if the presented characteristics are not given and is likely to not develop an IT identity related to that system but might develop a workaround if necessary.

#### 4.2. IT identity regulation

In section 2.3 Theoretical framework we presented the Alvesson & Willmott (2002) framework, which is not only concerned with identity work and self-identity, but also regards identity regulation as one key element to shape the identity of individuals by triggering identity work. Hereby, they describe identity regulation as “discursive practices concerned with identity definition that condition processes of identity formation and transformation” (Alvesson & Willmott, 2002). In their framework, Alvesson & Willmott (2002) consider identity regulation as organizational control. However, we want to adopt their framework to our empirical analysis by observing how individual Management Accountants are either influenced by identity regulation or use identity regulation actively to influence other Management Accountants. Furthermore, we will only investigate Management Accountants’ IT identity regulation, i.e. how the formation and transformation of individual Management Accountants’ is influenced and shaped by IT identity regulation or how individual Management Accountants exert IT identity regulation on their colleagues. Although Carter & Grover (2015) acknowledge the idea of situational influences an organization can take on individuals’ IT identity, they consider the organizational influence as limited, “since IT identity is primarily a personal construction”, especially “when IT use is not interdependent or has low knowledge barriers”. In the following Carter & Grover’s (2015) hypotheses will be tested against our

empirics by using Alvesson & Willmott's (2002) framework to analyze our empirics. Alvesson & Willmott (2002) introduce nine distinct tools of identity regulation in their framework: "*defining the person directly; defining a person by defining others; providing a specific vocabulary of motives; explicating morals and values; knowledge and skills; group categorization and affiliation; hierarchical location; establishing and clarifying a distinct set of rules of the game; defining the context*". We structure our analysis in the following according to these tools and add the tool of recruitment to Alvesson & Willmott's (2002) tools. Please note that all of the presented tools of IT identity regulation might occur in parallel and are potentially highly interlinked. However, for a more structured presentation of our empirical findings we present the tools as defined by Alvesson & Willmott (2002) separately and link them in chapter 4.5.

#### 4.2.1. Defining the person directly

The first tool of how IT identity can be regulated is by "*defining the person*" directly. Hereby, "the more precise the definition, the less vague are the implications" (Alvesson & Willmott, 2002) if IT should be a part of individual Management Accountants' identity. In our study, Management Accountants on the Senior and Executive level provided rather precise formulations that Management Accountants have to build IT identities by developing a "diverse skill set of technical skills that go beyond the pure accounting skills" (IP2, Executive, TechCo). IP5 (Senior, Mechanical-engineeringCo) even mentioned that "we have a competence wheel", which includes IT, of "what you're expected to know". Even more precisely and explicitly, IP7 (Senior, Mechanical-engineeringCo) said "I need people who are very good at ERP (...) those are the kind of people that I will always need in the future and who will need to be business controllers". Concluding, we found that Executive and Senior Management Accountants generally exert IT identity control by stating explicitly the importance of IT for their profession and future Management Accountants during our interviews and in the communication with (more junior) Management Accountants.

Connecting the above empirical findings to Carter & Grover's (2015) hypothesis that organizational influence on the individual's IT identity may be limited "when IT use is not interdependent", we do not argue against this hypothesis. However, we find that the above empirics indicate that IT use is interdependent because individual Management Accountants are not free to choose whichever IT system they personally prefer (i.e. IP7's explicit notion of ERP-systems for example). Thus, Senior and Executive Management Accountants are able to excerpt a significant amount of IT identity regulation on their subordinates to engage in certain IT.

#### 4.2.2. Defining a person by defining others

Opposite to "*defining a person*" directly by precise definitions, one can also regulate IT identity by "indirectly referring to the characteristics of specific others" (Alvesson &

Willmott, 2002). We found Senior and Executive Management Accountants using this tool of IT identity regulation to put pressure on more junior Management Accountants by “challenging people and also telling people look they are doing it” (IP5, Senior, Mechanical-engineeringCo), with a direct reference to the use of IT systems to accelerate the month-end closing. However, not only did we find Senior and Executive Management Accountants putting pressure on their subordinates, but we also found the use of role models to be one way of “*defining a person by defining others*” and to motivate subordinates to implement IT into their identity. Talking about the implementation of a new IT system, IP2 (Executive, TechCo) mentioned that they start the training for the new IT system with managers, because “everyone looks at the manager” and “if people say my manager, he or she looks cool, maybe I don’t have to worry that much” about the acceptance of the new IT system among the other employees. Summarizing, the empirics illustrate how Executive and Senior Management Accountants use the tool of “*defining a person*” by defining others to put pressure on subordinates to use IT in their working life, but also how they motivate their subordinates to adapt to new IT systems more easily by creating role models. This is in line with Stets & Burke’s (2000) findings, that

“Individuals’ categorization of themselves as group members motivates them to become like others in some in-group (as opposed to members of some out-group), to behave like other in-group members and to see things from the in-group’s perspective.” (Stets & Burke, 2000; in Carter & Grover, 2015)

Hence, “*defining a person by defining others*” can be a powerful tool to regulate IT identity.

#### 4.2.3. Providing a specific vocabulary of motives

Alvesson & Willmott (2002) define this identity regulation tool as “a particular interpretive framework (that) is commended and promoted by management through which employees are encouraged to understand the meaning of their work.”. They connect this definition to social motives as well. Although some interviewees mentioned during our interviews behaviors of more senior Management Accountants that might include aspects of “*providing a specific vocabulary of motives*” as defined by Alvesson & Willmott (2002), we argue that these notions fit better in other categories of Alvesson & Willmott’s (2002) framework. Consequently, we report about the creation of role models in chapters 4.2.2 and 4.2.5 and about the use of core values and mission statements in chapter 4.2.4.

#### 4.2.4. Explicating morals and values

“Espoused values and stories with a strong morality operate to orient identity in a specific direction or at least stimulate this process” (Alvesson & Willmott, 2002)

Alvesson & Willmott (2002) illustrate this identity regulation tool to be used, inter alia, in the micro-management of smaller teams, when the team develops a strong mutual understanding of shared values. However, we only observed strong mission statements and core values in a broader organizational context. IP15 (Middle-level, Mechanical-engineeringCo) stated

“We have developed the mindset and the culture of having this firm believer by saying this and by literally living by these standards of saying there is always a better way. That creates a way of thinking which is not static but really drives you to evolve and most of the people that I speak to are not threatened by this.” (IP15, Middle-level, Mechanical-engineeringCo)

In other interviews with employees from the Mechanical-engineeringCo the strong emphasis on this core value was also implied. Hence, we argue that a strong emphasis on a company's core values might also be a tool to regulate IT identity and to encourage Management Accountants to engage fearlessly in IT.

#### 4.2.5. Knowledge and skills

Alvesson & Willmott (2002) identify “*knowledge and skills*” as one tool of (IT) identity regulation, because “knowledge defines the knower”, i.e. one's knowledge and skills define who they are.

We observed that Executive and Senior Management Accountants use this tool extensively by setting up management education programs for more junior Management Accountants. Talking about the implementation of automation tools, IP14 (Middle-level, New-TechCo) mentioned “our Senior Director of Accounting operations, that was something she led and kicked off” and that “one of the BigFour [Professional service firms] was helping train the staff on (...) how to build bots”. IP8 (Senior, Mechanical-engineeringCo) also mentioned that she actively approaches people to ask them “have you tried this [RPA automation] and develop your own code? Have you tried to look into this?”, thus, pushing Management Accountants to acquire the knowledge and skills to build an IT identity related to automation. Further, IP9 (Senior, TechCo) responded to the question what strategies she uses to get her subordinates to use new systems with “of course training and also creating different types of user communities because humans are like that, if you see that your colleague is nice (...) you get inspired and you want to try out yourself”. Altogether, we consider the use of education programs as one main tool used by Executive and Senior Management Accountants to influence the formation of an IT identity among more junior Management Accountants.

The above empirics illustrate quite well that and how the different tools of identity regulation described by Alvesson & Willmott (2002) are connected (for a more thorough analysis please refer to chapter 4.5). IP9's mention of the course trainings, which are linked to the creation of user communities, constitute also another form of role models

and the creation of social groups. In this example out-group members are connected to in-group members and are thus motivated to become in-group members by acquiring IT knowledge and skills.

Additionally to the empirical observations above, we also found evidence amongst the more junior Management Accountants, that education programs are one main factor for them to form an IT identity. IP20 (Junior, New-TechCo) stated that he is engaged in automation and the coding of bots because “they [the management] launched a citizen developer program” for “mostly people below manager level”. In accordance with that statement, IP12 (Middle-level, ManufacturingCo) also highlighted the importance of education programs with regards to the implementation of new IT systems. Thus, we conclude that education programs are an important factor for IT identity regulation not only for Executive and Senior Management Accountants to influence more junior Management Accountants, but they are also widely accepted among more junior Management Accountants and help to form an IT identity. This is in line with Carter & Grover’s (2015) notion of training as one specific situational influence on an individual’s IT identity.

Furthermore, our empirics indicate that IT identity regulation with respect to “*knowledge and skills*” is not limited within the organization itself, but there are also extra-organizational macro factors that influence Management Accountants’ IT identity formation. IP10 (Senior, TechCo) mentioned that “more and more” junior Management Accountants bring the required IT knowledge and skills to the job “because it is part of the education paths and the degree that they bring with them”. Further, IP20 (Junior, New-TechCo) said that “in the future, probably in schools, accountants and businesspeople should learn more about that technology, because that is a huge part of the future”. Concluding, schools and universities might also be part of IT identity regulation amongst Management Accountants. This is in line with Goretzki et al.’s. (Working Paper) findings that universities and other institutions are involved in broader discourses. The influence of a broader extra-organizational discourse on Management Accountants’ construction of IT identity is analyzed in-depth in chapter 4.3.4.

#### 4.2.6. Group categorization and affiliation

“The dividing up of the social world into “us” and, by implication although more or less clearly pronounced, “them” creates or sustains social distinctions and boundaries (Ashforth & Mael, 1989; Turner, 1982, 1984). [...] Being a team member and/or a member of the wider corporate family may then become a significant source of one’s self-understanding, self-monitoring and presentation to others.” (Alvesson & Willmott, 2002)

In the New-TechCo we observed a way of thinking amongst their employees, that was rather explicit in creating social boundaries and distancing themselves from other

industries in terms of digitalization and thus, how they incorporate IT as part of their identity. Talking about handling big data, IP3 (Senior, New-TechCo) said “we’re a software company, we have an advantage” and IP14 (Middle-level, New-TechCo) further elaborated “more traditional industries don’t have that experience (...) you need to understand the systems, (...) moving data from one system down through four different ones and then making its way into your ERP and so it's a totally different skill set that a lot of people and accounting just don't have through their experience”. We consider this narrative they create within their company as a clear division of the world into “us” and “them”, which constitutes to the self-understanding and self-presentation of the individual Management Accountants within this company.

We categorize this high self-esteem amongst the employees in the New-TechCo as high computer self-efficacy (“An individual’s beliefs about his or her capabilities to use computers” (Compeau et al. 1999 in Carter & Grover (2015)). Interestingly, the interviewees seem to connect their affiliation with the New-TechCo with a great computer self-efficacy. Thus, the organizational context and being a member of this “*digital native*” company seems to affect the self-understanding of their Management Accountants and in turn their relatedness to IT, since they feel more connected to IT in general.

#### 4.2.7. Hierarchical location

Alvesson & Willmott (2002) argue that the hierarchical location (i.e. the different seniority levels of the interviewed Management Accountants in our study) “is central in answering the question “who am I?””. Hierarchical location can be formal or informal, intra-organizational within as well as between organizational functions but also extra-organizational.

We identified the way how and which IT systems are used as a form of intra-organizational IT identity regulation. Interviewees on the Executive level reported to mainly use Microsoft Office programs in their everyday working life. IP1 (Executive, ManufacturingCo) stated that the only task he uses the ERP-system for is to approve orders. This statement was verified by his subordinate IP11 (Middle-level, ManufacturingCo), who stated that “although IP1 has extensive authorizations within the ERP- and BI-system, he rather sets up a meeting with me to present him the analyses, than looking into the system on his own”. In line with that observation, IP2 (Executive, TechCo) also reported “I don’t use any system (...) I am in a position where I rely on others to report to me. So I don’t even have access to the ERP-system.”. IP13 (Middle-level, ServiceCo) reported similar relationships amongst more senior Management Accountants at his employer but stated that he intends to use more sophisticated IT systems even when he is going to be in a more senior position in the future, because he grew up with that technology. Concluding, we found evidence that the Executive Management Accountants do not form an IT identity to more sophisticated IT systems in

their working life, because they don't use them. Instead, they expect their subordinates to provide them with the necessary analyses.

We consider this aspect especially interesting, because as shown in 4.2.1, 4.2.2 and 4.2.5 Executives and Seniors expect more junior Management Accountants to be experts in sophisticated IT systems, yet they are not using respective systems on their own. Further, in some companies Executives and Seniors even decide on which IT systems will be implemented in a rather top-down process. In this respect, there seems to be a disconnect with regards to more senior Management Accountants excerpting IT identity regulation on more junior Management Accountants, although the more senior Management Accountants in some cases do not have an IT identity to the respective IT.

Another aspect of intra-organizational IT identity regulation via the hierarchical location we observed was the process of deciding on which IT systems to use and the overall infrastructure design of IT systems. This is in line with Heinzlmann (2018) who found that the choice which IT systems to use constitutes a form of identity regulation. On the one hand, IP13 (Middle-level, ServiceCo) reported that only the company's executives can decide which IT systems will be implemented. On the other hand, IP5 (Senior, Mechanical-engineeringCo) stated that in their company it is more of an iterative process and "we don't do it from top down, we do it together". This illustrates the different approaches companies can choose. Deciding on IT systems from top-down by executives indicates a strong level of IT identity regulation, especially if the respective IT system is essential to subordinates' work. Essential in relation to IT systems is therefore defined in a way that there is no possibility to carry out the respective work without these systems. The more iterative approach allows for more involvement of subordinates and provides more leeway for more junior Management Accountants to engage in self-IT identity work instead of being strongly regulated by superiors.

We consider the above observation to be in line with Alvesson & Willmott's (2002) findings, that "progressive companies" tend to down-play formal internal hierarchy and try to create a narrative of an elite group of people, "through being an organic, adhocratic, leading-edge company rather than a bureaucracy", which in turn implies "that organizational members are ahead of the rest of the competition" (Alvesson & Willmott, 2002).

#### 4.2.8. Establishing and clarifying a distinct set of rules of the game

Establishing and clarifying a distinct set of rules of the game refers in Alvesson & Willmott's (2002) framework to the "natural way of doing things in a particular context". Although Alvesson & Willmott (2002) describe these "rules of the games" as less formal, we found rather explicit definitions with regards to the "natural way of doing things" in the context of the usage of certain IT systems. IP11 (Middle-level, ManufacturingCo) mentioned that "the group provides certain guidelines" with respect to the use of IT.

Recommended guidelines were also apparent in the Mechanical-engineeringCo, when IP7 (Senior, Mechanical-engineeringCo) stated that “we’re very driven by the requirements of the group, so it’s always been the latest technology (...) that we’re meant to use”. Furthermore, IP9 (Senior, TechCo) also reported that “they [the group] have introduced new platforms, new tools, that we can use. So, they are providing the infrastructure from a global level (...) but we should use it”. Altogether, throughout the variety of companies observed, the empirics imply that companies set a “*distinct set of rules of the game*” (Alvesson & Willmott, 2002) of which IT to use, which constitutes IT identity regulation.

The recommended guidelines are also regarded as one tool of situational influences by Carter & Grover (2015) within opportunities and support as use policies. However, we consider the guidelines mentioned in the empirics more binding and obligatory for Management Accountants to comply with, rather than being simple means of support as indicated by Carter & Grover (2015). Heinzelmann (2018) agrees with our finding since he also observed the choice of which IT systems to use as a form of identity regulation.

#### 4.2.9. Defining the context

“*Defining the context*” in Alvesson & Willmott (2002) is about explicating the context or zeitgeist in which a certain company operates, thus, defining and reshaping identities and characteristics that are required within this particular organizational setting.

Our empirics point towards companies actually using this tool of IT identity regulation quite frequently to comfort their Management Accountants when new IT systems are about to be implemented and changes to their working routines and identities are inevitable. IP2 (Executive, TechCo) stated that changes “won’t come as a surprise for them [Management Accountants]” and that “they will be prepared, maybe they have developed skill sets for example in technical analytics or they’re ready to take on a new job role”. IP2 also mentioned

“I spend time [with my line managers] and I focus a lot on communicating to them so they should feel... not safe, but they should feel informed about what’s happening.” (IP2, Executive, TechCo)

IP6 (Senior, Mechanical-engineeringCo) agreed with the above statement by stating

“Now we are building the strategy for the next three years and preparing the organization for this change is one of the top priorities, either to put them (Management Accountants) through different training or support them in this new age.” (IP6, Senior, Mechanical-engineeringCo)

These empirical findings are in line with Alvesson & Willmott’s (2002) definition of this category of IT identity regulation, which includes the idea that by defining the context organizations can encourage their employees to “acquire capacities and dispositions that

will enable them to become 'enterprising' persons" (du Gay, 1996, p. 27 in Alvesson & Willmott, 2002). In our case the organization is represented by the Executive and Senior level, that engage in IT identity regulation of their subordinates. This again illustrates how IT identity regulation is on the one hand exercised by more senior Management Accountants and on the other hand experienced by more junior accountants.

#### 4.2.10. Recruitment

A final tool of IT identity regulation, which is not considered in the Alvesson & Willmott (2002) framework, is the recruitment of Management Accountants. IP15 (Middle-level, Mechanical-engineeringCo) mentioned that "recruiting for mindset" is their top priority, when employing new recruits. IP5 (Senior, Mechanical-engineeringCo) added to that point

"You can develop your skills, but it is more difficult to develop a good attitude if you don't have one, right?" (IP5, Senior, Mechanical-engineeringCo)

In the context of the interviews we understand the notion of the "right mindset" to be Management Accountants that are motivated to engage, inter alia, in IT. We interpret these empirics as a more implicit tool of IT identity regulation. According to Carter & Grover (2015) situational influences on individuals trigger different behaviors in the form of feature use behavior, enhanced use or resistance behavior. While the latter reaction generally contributes to a weak IT identity or no considerable IT identity, the former two reactions generally contribute to a strong IT identity. Thus, we argue that preselecting new Management Accountants based on their general willingness to engage in IT and in the change of IT systems increases the likelihood of feature use behavior or enhanced use instead of resistance behavior. Thus, the likelihood for the newly recruited Management Accountants to develop strong IT identities with new IT is increased.

### 4.3. Sources of identity regulation

Alvesson & Willmott (2002) identify in their framework different patterns or "*sources*" of identity regulation. These distinct sources of identity regulation emerge from different origins and are described as managerial attempts, cultural-communitarian attempts and quasi-autonomous attempts / micro-emancipation. We want to highlight that the different sources described by Alvesson & Willmott (2002) are heavily intertwined and also have been touched upon in section 4.2 IT identity regulation. However, we want to illustrate the different sources of IT identity regulation in detail in this chapter and thus, provide an in-depth analysis.

#### 4.3.1. Managerial attempts

As the first source of identity regulation Alvesson & Willmott (2002) describe managerial attempts as “measures induced by management”. While on the one hand measures induced by management may assist employees “in coping with ambiguity or when undertaking focused work”, it may, on the other hand, prevent employees from critical reflection and ethical judgement.

We encountered many cases in which managers attempted to explicitly regulate Management Accountants’ IT identity. IP8 (Senior, TechCo) made the bold statement that “I push them to take trainings” when talking about Management Accountants’ adaptation to new IT. IP8 further elaborated that “it was clearly stated that we have to automate everything we can and as soon as possible”. Explicit managerial attempts were also mentioned by IP10 (Senior, TechCo), who stated with regards to the analysis of big data

“I sent one of my business controllers away and said this is statistics. Now go ahead and refresh your statistics knowledge here because I think we need to understand that.” (IP10, Senior, TechCo)

Altogether, managerial attempts to excerpt IT identity regulation were common throughout our interviews and are in line with Alvesson & Willmott’s (2002) suggested sources of identity regulation.

Not only did we observe Management Accountants excerpting managerial attempts to regulate IT identity, but we also encountered Management Accountants being on the receiving end of managerial attempts to regulate IT identity. IP11 (Middle-level, ManufacturingCo) reported that “now we have a new superior, who implements a new way of thinking, which I appreciate” when talking about their new and more digital approach to work. IP7 (Senior, Mechanical-engineeringCo) further stated that “we are very driven by the requirements of the group, so it is always the latest technology that we are meant to use”. This illustrates that not only more junior Management Accountants are being regulated in their IT identity, but also more senior Management Accountants are influenced.

We want to stress with regards to managerial attempts that such direct guidance may indeed not facilitate learning, but might constrain the interaction of organizational members (i.e. Management Accountants in our case) (Willmott, 1997). However, we did not observe Management Accountants reacting demoralized to such managerial attempts or that strong managerial attempts were counterproductive.

#### 4.3.2. Cultural-communitarian attempts

Contrary to managerial attempts of identity regulation, cultural-communitarian attempts are rooted either in the broader organizational context (i.e. ”historically derived patterns

of belief and legitimacy”, Alvesson & Willmott, 2002) or are of occupational and societal origin (Ezzamel & Willmott, 1998). They occur rather independently from managerial attempts. Thus, cultural-communitarian attempts might oppose or support managerial attempts, but they might also work independently (Alvesson & Willmott, 2002).

In our empirics we found cultural-communitarian IT identity regulation attempts to be present in the form of clearly stated mission statements as well as the historical heritage and affiliation to specific industries of companies. This was clearly stated by IP2 (Executive, TechCo):

“I mean we are a technology company. So even if you are in finance, we have a little bit of a technology heart. And I think that is important to remember. So that means we really love to run into new technologies, test new things and innovate as part of the DNA.” (IP2, Executive, TechCo)

IP2 explicitly states that the sheer fact that the company he works for is affiliated to the tech industry influences all professions within the company, even the finance function and him, personally. This was also mentioned by IP20 (Junior, New-TechCo), who stressed that his tasks shift and include more sophisticated data analysis because of “working at a tech company”. Thus, New-TechCo’s heritage and affiliation to the Tech-industry clearly influences his area of expertise. Since “knowledge defines the knower” (Alvesson & Willmott, 2002), we consider this as cultural-communitarian IT identity regulation. Concluding, the two examples illustrate how a company’s affiliation to a certain industry can influence and regulate the IT identity of individual Management Accountants.

Additionally, we observed in the Mechanical-engineeringCo a strong emphasis on their mission statement and core value of “There is always a better way”, which they also applied in the context of implementing more and more IT in daily working routines. As mentioned in 4.2.4 “*Explicating morals and values*”, IP15 (Middle-level, Mechanical-engineeringCo) stated

“We have developed the mindset and the culture of having this firm believer by saying this and by literally living by these standards of saying there is always a better way. That creates a way of thinking which is not static but really drives you to evolve and most of the people that I speak to that they are not threatened by this.” (IP15, Middle-level, Mechanical-engineeringCo)

Since this mission statement is very dominant in the Mechanical-engineeringCo, we consider it an influence and tool to regulate the IT identity of Management Accountants of cultural-communitarian origin. This demonstrates that cultural-communitarian IT identity regulation is not only anchored in the historical heritage and affiliated industry of a company but can also be exercised by a strong mission statement and core values of companies of any industry and historical heritage.

#### 4.3.3. Quasi-autonomous / micro emancipation

Alvesson & Willmott (2002) also present a third pattern of identity regulation, which they named quasi-autonomous. If certain preconditions are prevalent in a company, employees might move towards “*micro emancipation*”, which indicates that managerial or cultural-communitarian identity regulation are only partly or temporarily involved in this pattern of identity regulation. The preconditions include

- 1) “a combination of elements of stability/integration with elements of change/plurality,
- 2) a space as well as resources, for critical reflection and
- 3) a supportive form of social interaction” (Payne, 1991; Willmott, 1998; in Alvesson & Willmott (2002))

We identified in our interviews patterns of quasi-autonomous IT identity regulation in companies that provided the above mentioned preconditions. IP2 (Executive, TechCo) stated

“We are a little bit generous with our employees in terms of using new technology and take a course on A, B or C because we want them to mentally be prepared for the big steps that are coming.” (IP2, Executive, TechCo)

Our interpretation of IP2’s statement is that he implicitly describes how he, as an executive Management Accountant, provides his employees the opportunity to explore new technology without forcing the new technology upon them and without negative consequences if they do not engage in the new technology. In that sense, we consider all three preconditions for micro-emancipation fulfilled, since 1) he communicates to his employees a dynamic change while also not forcing anything upon them, thus, providing a sense of stability and integration; 2) is generous with employees and provides the time and resources to engage in courses and explore new technology if they want to; and 3) by not forcing the technology upon employees and let them have a choice without negative consequences supports employees emotionally in the process.

This pattern was also observed in the New-TechCo. IP20 (Junior, New-TechCo) reported that they are granted opportunities to improve systems and processes and “anyone can really create an opportunity or have an idea for an opportunity”, which they can think about in between month-end closings, since they are granted spare time for side-projects like the mentioned opportunities. He further elaborated that “I don’t know if it would negatively impact people if they were not to create opportunities (...) it is highly appreciated and definitely reflective of your work” IP20 (Junior, New-TechCo). We regard his statements as descriptions of preconditions two and three, as his employer grants him the time as well as resources to critically reflect upon the systems and processes and provides resources to pursue any kind of engagement to realize a potential

opportunity. If Management Accountants engage in “*opportunities*”, it is appreciated, which is a supportive form of social interaction (precondition three).

To further strengthen our argument and underline the importance of the preconditions for micro-emancipation to emerge amongst Management Accountants, we found evidence in ManufacturingCo, that if the preconditions are not met micro-emancipation cannot emerge. IP11 (Middle-level, ManufacturingCo) mentioned that “I think there is a lot of potential to further optimize the systems and processes (...) but is it worth it to spend some 10,000 Euros additionally to get a few more reports?”. IP12 (Middle-level, ManufacturingCo) added

“It is impossible to work on new concepts and ideas in between 5 meetings and 3 phone calls. Everybody is caught up in their everyday tasks, that is the largest obstacle we face as controllers” (IP12, Middle-level, ManufacturingCo)

These statements illustrate that Management Accountants in ManufacturingCo are not provided with the necessary resources in the form of time and money to critically reflect and work on IT projects based on their own initiative, even though there are clear indications that the Management Accountants would be willing to engage even further in new IT.

#### 4.3.4. Extra-organizational macro factors – Universities, shareholders, customers and competitors

The above-mentioned patterns of identity regulation of managerial, cultural-communitarian and quasi-autonomous attempts are all within the intra-organizational context. Alvesson & Willmott (2002) did not take extra-organizational macro factors as sources of IT identity regulation into account. However, in our empirics we found clear evidence, that other extra-organizational factors influence Management Accountants’ IT identity. This finding is in line with Goretzki et al. (Working Paper). We already mentioned extra-organizational macro factors as part of IT identity regulation in section 4.2.5 “*Knowledge and skills*”, when IP20 (Junior, New-TechCo) and IP10 (Senior, TechCo) highlighted the importance of schools and universities as a great influence on Management Accountants’ IT identity.

Additionally, the importance of the shareholder and legal structure became also apparent as a source of IT identity regulation in our interviews. IP3 (Senior, New-TechCo) noted

“When we were going public, we made a huge push to move into the cloud. And that was like our quickest way to get into a controlled and modern system. We were on some things totally outdated. That would not serve the needs of a public company.” (IP3, Senior, New-TechCo)

This illustrates the influence that the legal structure of a company can have on the systems they use and thus, influences and regulates the IT identity of Management Accountants.

IP18 (Junior, ServiceCo) also reported that when the company was sold to a Private-Equity company, the new owners pushed the implementation of new ERP- and BI-systems to create a greater transparency of the business.

In the interview with IP11 (Middle-level, ManufacturingCo) we encountered another extra-organizational source of IT identity regulation in the form of a company's customers. IP11 reported that "a lot of it was also demanded by our customers, who demand digital invoices instead of printed ones". Thus, another extra-organizational source of IT identity regulation might be a company's customers.

As a last extra-organizational source of IT identity regulation of Management Accountants we found a company's competitors. IP14 (Middle-level, New-TechCo) said with regards to the month-end closing "I know there are other tech companies that do it in one day, right? And so it's like how do you make sure that you're being as efficient as possible? There are always ways that we can streamline and automate reporting to a higher degree". Our interpretation of this statement is that companies might feel pressure from competitors, if the competitors have more efficient and faster processes and IT systems in place, they have to elevate their efforts as well and, like in the example provided above, automate more processes.

Concluding, we observed a variety of extra-organizational macro factors that have a more or less direct influence on the IT identity of Management Accountants. We want to stress that in some cases the examples provided above may not trigger self-IT identity work by Management Accountants directly, but they certainly influence decision-makers (i.e. Management Accountants on Executive and Senior level). In some cases the introduced extra-organizational factors might trigger self-IT identity work directly, in other cases they might influence decision-makers, who in turn might engage in managerial IT identity regulation.

#### 4.4. IT identity

In chapters 4.1, 4.2 and 4.3 we analyzed our empirical data with respect to how IT identity of Management Accountants is constructed. In order to provide a holistic view on the interplay of identity work, identity regulation and self-identity as described by Alvesson & Willmott (2002), we want to examine the IT identity of Management Accountants. Carter & Grover (2015) argue that

"IT identity will be reflected in individuals' feelings of relatedness, emotional energy, and dependence when thinking of themselves in relation to a particular IT."  
(Carter & Grover, 2015)

We observed all of the three feelings of Management Accountants towards IT systems described by Carter & Grover (2015) in many interviews and will provide exemplary

statements for each characteristic of self-IT identity. IP7 (Senior, Mechanical-engineeringCo) expressed her relatedness to IT systems when stating

“You know we use IT as our main tools, I sit in front of it all day. And that whether it's something very basic, as Excel, Microsoft Teams, but also the systems that we use, we use SAP, power-BI so all those things are part of my everyday working life I would say.” (IP7, Senior, Mechanical-engineeringCo)

In our view IP7 clearly expressed her interactions with IT as integral to her sense of self in the working environment and essential to her job. IP12 (Middle-level, ManufacturingCo) agreed by stating “I work every day with SAP for several hours”. IP10 (Senior, Mechanical-engineeringCo) further added that “the change is not so dramatic, it is enabling. It is making things possible that were impossible before.”. This finding is in line with Lamb & Davidson (2005), who find that “the ‘who I am’ of professional identity is interwoven with ‘what I do’ with IT”.

Further, we also investigated the dependence on IT. IP7 (Senior, Mechanical-engineeringCo) stated explicitly “what I have seen in my own personal role is the kind of reliance on ERP systems, reliance on master data”.

Lastly, Carter & Grover (2015) describe emotional energy as one key factor to construct a strong IT identity, i.e. whether or not the individual connects positive feelings like enthusiasm or confidence in relation to IT. There was a general consensus amongst the interviewees of our study that IT is a strong enabling factor for Management Accountants and interviewees highlighted the opportunities of more advanced technology. Talking about a new IT system, IP4 (Senior, New-TechCo) said

“I'm super excited for it because it will free up a whole bunch of more time. It will allow me to do my reviews faster where I'm not as reliant on others to pull some information out of the systems that are more proficient in the details, and then it will be able to visualize data there won't be as much time in.” (IP4, Senior, New-TechCo)

This enthusiasm and highlighting the value-add of a new system was also explicitly expressed by IP12 (Middle-level, ManufacturingCo) when he stated that “I was excited for the new system (...) the new SAP is on a whole other level, compared to the old system”.

Concluding, we found strong evidence amongst our interviewees, that self-IT identity is prevalent amongst Management Accountants in all its facets of relatedness, dependence and emotional energy, as described by Carter & Grover (2015).

#### 4.5. Interplay of IT identity regulation and self-IT identity work in the construction of Management Accountants' IT identity

To illustrate the interplay of IT identity regulation and self-IT identity work in the construction of Management Accountants' IT identity we investigate how the different forms of self-IT identity work as defined by Alvesson & Willmott (2002) are triggered and illustrate various ways of IT identity construction.

We find that self-IT identity work of “*central life interest*” and more specifically self-IT identity work through outside pressure is triggered by managerial attempts of “*defining the context*” and offer educational training (knowledge and skills). On the one hand, we observed in our empirics the extensive efforts Executive and Senior Management Accountants undertake to prepare their more junior Management Accountants for upcoming new IT systems by defining the context and providing junior staff extensive educational training for new systems. On the other hand, we found that junior Management Accountants are well aware of the technological changes and thus, actively engage in self-IT identity work by acquiring new knowledge and skills, although the training was in some cases not mandatory. We argue that this behavior can be described as feature use behavior and enhanced use behavior (Carter & Grover (2015)). As a consequence, this may result in a feeling of connectedness to the new IT. Following Carter & Grover's (2015) argument, a feeling of connectedness to an IT constitutes to the feeling of relatedness, which is one of the three dimensions of IT identity. Further, we interpret Management Accountants' motivation to engage in IT training although the training is not mandatory as enthusiasm towards the IT system. This implies a positive emotional energy of Management Accountants in relation to IT and describes another dimension of IT identity. Therefore, we consider managerial attempts of more senior Management Accountants to excerpt IT identity regulation in the form of defining the context as a useful tool to trigger self-IT identity work of more junior Management Accountants. However, we consider cases, in which the educational training was not mandatory, but junior Management Accountants engaged in them anyways, as micro-emancipation and not managerial attempts. In these cases the preconditions for micro-emancipation were given and junior Management Accountants seized the opportunity.

Further, we regard self-IT identity work in the form of coherence as defined by Alvesson & Willmott (2002) to be triggered by managerial attempts by “establishing and clarifying a distinct set of rules of the game”. These managerial attempts originated from either more senior Management Accountants or from a broader organizational context (group guidelines) to use new IT systems. We found that in order to familiarize with new IT systems, that in some cases are “forced” upon them, Management Accountants engage in “*coherence*” self-IT identity work by utilizing already existing “old IT identities” to create new IT identities. However, we also want to stress the importance of recruitment as a crucial managerial tool for IT identity regulation with regards to coherence, since

there is no “limitless plasticity” (Alvesson & Willmott, 2002). Thus, IT identity can only be regulated within a predefined personal corridor, which indicates that recruiting Management Accountants with the right mindset to collaborate is an important tool of IT identity regulation.

Continuing, we found the IT identity regulation tool of “*group categorization and affiliation*” to trigger self-IT identity work in the form of “*distinctiveness*”. In New-TechCo, there seemed to be a strong consensus and division of the world in “us” versus “them” with regards to the use of IT. This led to Management Accountants in New-TechCo to engage in “*distinctiveness*” self-IT identity work and implicitly setting themselves apart from Management Accountants of other companies. Thus, we suggest to apply the concept of self-IT identity work not only on an individual level as described by Carter & Grover (2015) but also on an organizational level. Since this form of IT identity regulation stems not only from managerial actions, but also from the companies heritage in a certain industry sector, we regard this form of IT identity regulation of “*group categorization and affiliation*” also as cultural-communitarian IT identity regulation.

Self-IT identity work in the form of “*positive/social values*” was mainly observed in the form of creating aspirational identities by Management Accountants (Beach & Mitchell, 1987; Thornborrow & Brown, 2009). We consider this form of self-IT identity work to be triggered by several different tools of IT identity regulation. First, we observed that more senior Management Accountants engaged in managerial attempts to define persons directly, thus, creating a strong narrative of aspirational identities for more junior Management Accountants, who in turn engaged in self-IT identity work. Second, in another managerial attempt more senior Management Accountants created role models as a form of IT identity regulation with the “*knowledge and skills*” tool. Third, as not only a managerial but also a cultural-communitarian attempt of IT identity regulation we saw the use of “*group categorization and affiliation*”, as described in the previous paragraph, creating narratives of aspirational identities. Lastly, we consider the IT identity regulation tool of “*explicating morals and values*” to trigger self-IT identity work in a cultural-communitarian attempt. We interpret the strong emphasis on mission statements as a way to create aspirational identities for Management Accountants, also with regards to IT. Concluding, we observed many IT identity regulation tools triggering self-IT identity work in the form of “*positive/social values*”.

Connected to the creation of aspirational identities as self-IT identity work in the form of “*positive/social values*”, we consider self-IT identity work in the form of direction as another important tool for how Management Accountants’ construct IT identities. We argue that Management Accountants engage in “*direction*” self-IT identity work to expand their self-IT identity in line with Aron et al.’s (2003) self-expansion theory. The main motivation we observed to expand their self-IT identity was to elevate their career (i.e. reach a higher seniority level within the company). Via extra-organizational macro

discourses in universities, etc. and via managerial attempts to define the context (more junior) Management Accountants recognize the importance of IT for their future career. The before mentioned IT identity regulation attempts influence Management Accountants' in their decision which "routes appear more reasonable than others" (Alvesson & Willmott, 2002). As a result, in order to achieve their goal, i.e. career progress, Management Accountants engage in IT. Further, the previously mentioned aspirational identities also influence Management Accountants' perceived direction.

We also found "*self-awareness*" to be an important tool of Management Accountants' self-IT identity work. Certain IT identity regulation tools contribute to the self-awareness that engages Management Accountants in self-reflection and the formation or transformation of IT identities. First, "*hierarchical location*" was a clear factor of IT identity regulation that determined self-reflection and self-IT identity work in the form of "*self-awareness*" of Management Accountants. On the one hand, executive Management Accountants admitted making only limited efforts or no efforts at all in engaging in certain IT due to their hierarchical location. On the other hand, more junior Management Accountants were aware of their hierarchical location as well, which also determined their motivation why they engaged in certain IT. We consider the IT identity regulation tool of "*hierarchical location*" as managerial attempts by more senior Management Accountants to get more junior Management Accountants engaged in certain IT.

Second, we also consider managerial attempts to define the person directly as one IT identity regulation tool that triggers self-awareness-related self-IT identity work amongst Management Accountants. Providing clear definitions of certain characteristics that more senior Management Accountants expect from more junior Management Accountants, more senior Management Accountants get more junior Management Accountants to critically reflect upon whether or not they have the required IT identity.

Third, extra-organizational macro factors also act as a form of IT identity regulation of Management Accountants. We want to stress the importance of the broader discourse (Goretzki et al., Working Paper; Watson, 2008) that is happening in universities, amongst shareholders, customers and competitors on the required characteristics of Management Accountants. All these factors influence Management Accountants and trigger self-IT identity work in the form of "*self-awareness*", since they get Management Accountants to critically reflect.

Further, we observed "*coping strategies*" deployed by Management Accountants as an effective tool of self-IT identity work to positively influence the emotional energy of Management Accountants towards IT. Since emotional energy is one of the three dimensions of IT identity as defined by Carter & Grover (2015) we consider the deployment of coping strategies to be self-IT identity work, which is triggered by managerial attempts of "*defining the context*". This helps to comfort (more junior) Management Accountants and prepare them for upcoming changes.

## 5. Concluding discussion

In this paper, we illustrate and analyze how IT identities (Carter & Grover, 2015) of Management Accountants are constructed. Our analysis is focused on the interplay of IT identity regulation and self-IT identity work, which both form and transform Management Accountants' IT identity (Alvesson & Willmott, 2002). Whereas prior literature covered the importance and transforming power of IT systems on the occupational role and occupational identity of Management Accountants (Heinzelmann, 2018; Caglio, 2003; Morales & Lambert, 2013), this paper contributes to the existing literature by introducing the IT identity concept to the Management Accounting domain and by providing an in-depth analysis on how IT identities of individual Management Accountants are constructed. Our empirical analysis suggests that IT identity regulation is a key driver in the construction of Management Accountants' IT identity, which triggers self-IT identity work.

### 5.1. Construction of Management Accountants' IT identity by managerial attempts

As the main contribution of this paper we demonstrate the frequently occurring pattern of managerial attempts of IT identity regulation by more senior Management Accountants to trigger self-IT identity work of Management Accountants. Carter & Grover (2015) state that organizations can exert situational influence to provide opportunities and support for their employees to strengthen their IT identity. Further, Carter & Grover (2015) hypothesize that organizational influence on the individual's IT identity may be limited "when IT use is not interdependent". We do not argue against this hypothesis. However, we find that IT use is interdependent in the organizational context (e.g. companies/more senior Management Accountants decide which IT systems to use and all employees have to use them) and thus, Senior and Executive Management Accountants are able to exert a significant amount of IT identity regulation on their subordinates to engage in certain IT. Heinzelmann (2018) agrees with our finding by describing IT systems as "central means of establishing appropriate behavior" and identity regulation. This is in line with our findings and presents one tool of IT identity regulation used by Senior Management Accountants we observed. However, adding to Heinzelmann (2018), we identified multiple other tools of IT identity regulation. Concluding, we find that Senior and Executive Management Accountants engage in manifold ways of IT identity regulation, which triggers self-IT identity work and thus, according to our empirical findings, have a more prominent role in the construction of Management Accountants' IT identity than Carter & Grover (2015) suggest.

The importance of more senior Management Accountants in the process of IT identity construction presents our second contribution. Whereas previous literature focused on

how the individual is influenced by “the organization” (Heinzelmann, 2018; Carter & Grover, 2015; Jack & Kholeif, 2008) our research design allowed for a more in-depth analysis of the dynamics between different seniority levels in the construction of identity. We illustrate how more senior Management Accountants use multiple tools of IT identity regulation to trigger self-IT identity work of Management Accountants. Our empirical analysis indicates various reasons why more senior Management Accountants engage in IT identity regulation. On the one hand, our empirics suggest that more senior Management Accountants are concerned with the strategic development of the finance function within the organization. One key element for more senior Management Accountants to become or remain Business Partners are IT systems, which enable the finance function to conduct more sophisticated analyses in a more efficient way (Sanchez-Rodriguez & Spraakman, 2012). On the other hand, extra-organizational macro factors may impact more senior Management Accountants’ perceived strategic development goal of the finance function, i.e. to be a Business Partner. Our empirics suggest external pressure from customers, competitors or shareholders as possible extra-organizational macro factors (Goretzki et al., Working Paper). This illustrates that and indicates why more senior Management Accountants engage in IT identity regulation.

The observed managerial attempts of IT identity regulation by more senior Management Accountants constitute a possible tension between different seniority levels. On the one hand, more senior Management Accountants do not use more sophisticated IT systems regularly, because more junior Management Accountants provide them with the necessary analyses. However, more senior Management Accountants decide which IT systems to use. On the other hand, more junior Management Accountants are the power users of more sophisticated IT systems within the finance function. Yet, they are not always involved in the decision-making of which IT systems to use. Only in some cases we observed a more iterative approach in contrast to strict top-down approaches. This constitutes a disconnect and possible tension between different seniority levels in our opinion. Heinzelmann (2018) regards IT systems as “the central means of establishing appropriate behavior” and thus, as identity regulation. Thus, we consider the described behavior of more senior Management Accountants as IT identity regulation of more junior Management Accountants.

Interestingly, we found more junior Management Accountants to be very receptive to the IT identity regulation attempts by more senior Management Accountants and we did not observe resistance behaviors. Carter & Grover’s (2015) hypothesize that “since IT identity is primarily a personal construction, managerial interventions that focus on a single situation have limited potential to influence it directly”. Further, Willmott (1997) adds that managerial attempts, which provide direct guidance, may not facilitate learning, but might constrain the interaction of organizational members (i.e. (more junior) Management Accountants in our case) and might be demoralizing. However, we did not observe Management Accountants reacting demoralized to such managerial attempts or

that strong managerial attempts were counterproductive. Aron et al.'s (2003, in Carter & Grover, 2015) self-expansion theory presents one possible explanation why more junior Management Accountants are receptive to IT identity regulation and engage in self-IT identity work. They argue that according to their self-expansion theory "individuals' willingness to invest in interacting with IT is motivated by the extent to which they believe that doing so presents an opportunity to increase personal and social resources" (Aron et al., 2003). Our empirical findings indicate that more junior Management Accountants recognize self-IT identity work as an opportunity to "increase their personal and social resource" (Aron et al., 2003 in Carter & Grover, 2015) and thus, elevate their career, i.e. reach a higher seniority level.

## 5.2. Construction of Management Accountants' IT identity by cultural-communitarian attempts, micro-emancipation and macro factors (broader discourse)

Additionally to managerial attempts of IT identity regulation we also found cultural-communitarian patterns of IT identity regulation to be important as a trigger for Management Accountants' self-IT identity work. Especially amongst New-TechCo and TechCo we found this to be an important factor due to their historical heritage of being affiliated to the technology industry. However, not only companies with a technological heritage can excerpt cultural-communitarian IT identity regulation, but also companies with a strong mission statement and core values, that aim at the use of technology (at least partly) as the example of the Mechanical-engineeringCo illustrated. The influence of cultural-communitarian IT identity regulation on the construction of Management Accountants' IT identity is another contribution of this paper.

Another pattern of IT identity construction we observed was initiated via quasi-autonomous micro emancipation. Management Accountants in all case companies showed ambitions to engage into more IT systems than they were currently using. However, only Management Accountants in case companies that fulfilled the preconditions for micro emancipation as described by Alvesson & Willmott (2002) were able to build new IT identities to new IT systems or strengthen their existing IT identities based on their own initiative. This pattern of IT identity construction is more in line with Carter & Grover's (2015) original idea of IT identity as a personal construction.

Above all previously mentioned sources of IT identity regulation we found some extra-organizational macro factors that influence the broader discourse about Management Accountants' IT identity and in that way, influence Management Accountants of all seniority levels involved in the process of IT identity construction. In that sense we agree with previous literature that general discourses have an influence or act as a regulating factor within identity work (Alvesson & Willmott, 2002; Goretzki et al., Working Paper; Watson, 2008).

### 5.3. IT identity framework in accounting research

We argue that the IT identity framework as introduced by Carter & Grover (2015) is suitable for accounting research to examine the interplay of Management Accountants with IT and adds a new perspective to this discussion. It provides a holistic approach on the influence of IT on Management Accountants' identity and is especially interesting to investigate in the light of a more and more technology and digitalization driven accounting and finance function in organizations (Rikhardsson & Kraemmergaard, 2006). This is in line with Lamb & Davidson's (2005) finding that "the 'who I am' of professional identity is interwoven with 'what I do' with IT" (Lamb & Davidson, 2005 in Carter & Grover, 2015). This implies that IT is part of Management Accountants' occupational identity (Heinzelmann, 2018) and adapts continuously to what IT is capable of doing.

Further, Carter & Grover's (2015) IT identity framework adds the perspective of the individual Management Accountant's identity work with regards to IT in the general discussion about the significance of IT in the accounting profession. Whereas various papers investigated the disruptive power of IT systems on the accounting profession, this far, research lacks to take the individual perspective and observe the influences on Management Accountants' identity.

### 5.4. Limitations and future research

We acknowledge that due to the selection process of our interview partners our study may feature a selection bias of individual Management Accountants who are engaged in IT. We approached several companies with the broad topic of our study, the influence of digitalization and IT on the management accounting profession, in order to identify suitable interviewees. We reflect critically upon the selection and conclude that the cohort of Management Accountants who participated in our study might be engaged in IT to an above-average extent. This might also be one possible solution why we did not encounter user resistance behavior in relation to (new) IT. Nonetheless, we consider the findings of our study on how IT identities of Management Accountants are constructed as valid, since this process is not heavily impacted whether or not individuals are above-average engaged in IT. However, one might observe more resistance behavior to IT identity regulation attempts or negative emotional energy towards IT than we observed. Thus, future research might want to investigate a set of Management Accountants that is less engaged in IT to investigate potential resistance behavior and negative emotional energy towards IT.

The size of our case companies constitutes another limitation of our study. We consider all our case companies to be large cap companies. Thus, there might be differences in Management Accountants' IT identity construction in smaller companies that do not have clear structures within their finance function. Consequently, future research might

investigate the construction of Management Accountants' IT identity in smaller companies as well.

Further, we suggest investigating the emotional energy towards IT of accountants with more standard tasks. In our interviews some Management Accountants suggested that they consider the jobs of accountants who do standard and repetitive tasks to be more threatened by more sophisticated IT systems in the future. Therefore, it would be interesting to use the IT identity framework of Carter & Grover (2015) to investigate the emotional energy of these accountants' IT identity.

Another suggestion for future research is investigating why some companies fulfill preconditions for micro emancipation and others do not. We observed big differences in the allocation of necessary resources in terms of time and budget for employees to engage in IT related topics based on their own interest. We found a positive correlation between companies that consider themselves implicitly as "progressive companies" that engage in iterative processes regarding the implementation and design of new IT systems. However, it might also depend on the sheer size of a company. Therefore, we propose this topic to further research.

Lastly, we highlighted the importance of IT identity regulation in the construction of Management Accountants' IT identity, but we suggest further investigation *why* organizations and more senior Management Accountants engage in IT identity regulation. Although some implications are provided in our study, it was not the focus of our study and thus, a more nuanced research and analysis could provide substantial added value to better understand the aspect of IT identity regulation by organizations and more senior Management Accountants.

## 6. Appendix

### 6.1. Appendix A. Overview of conducted interviews

#	Code	Seniority	Position	Industry	Date	Length
1	IP1	Executive-level	CFO German Group	ManufacturingCo	22.03.2021	00:45:00
2	IP2	Executive-level	Head of Financial Control and Business Services	TechCo	22.03.2021	00:55:00
3	IP3	Senior-level	Director Revenue Accounting	New-TechCo	19.03.2021	01:05:00
4	IP4	Senior-level	Director of Accounting	New-TechCo	22.03.2021	00:50:00
5	IP5	Senior-level	Vice President Group Controller	Mechanical-engineeringCo	15.03.2021	01:30:00
6	IP6	Senior-level	Process and Innovation Manager & Business Controller	Mechanical-engineeringCo	30.03.2021	00:55:00
7	IP7	Senior-level	Business Controller	Mechanical-engineeringCo	07.03.2021	00:45:00
8	IP8	Senior-level	Finance Manager Digitalization & Operational Excellence	TechCo	29.03.2021	01:00:00
9	IP9	Senior-level	Head of Accounting - Finance IT and Automation	TechCo	09.04.2021	01:00:00
10	IP10	Senior-level	Head of Group Business Control	TechCo	14.04.2021	00:50:00
11	IP11	Middle-level	Controller Group	ManufacturingCo	16.03.2021	00:50:00
12	IP12	Middle-level	Controller Group	ManufacturingCo	25.03.2021	00:45:00
13	IP13	Middle-level	Head of Performance Management	ServiceCo	11.03.2021	01:05:00
14	IP14	Middle-level	Senior Manager Revenue Accounting	New-TechCo	15.03.2021	00:45:00
15	IP15	Middle-level	Group Digital Finance Manager	Mechanical-engineeringCo	15.03.2021	01:30:00
16	IP16	Middle-level	Digital Finance Program Manager	Mechanical-engineeringCo	01.03.2021	00:50:00
17	IP17	Junior-level	Financial Controlling Manager	ServiceCo	05.03.2021	01:50:00
18	IP18	Junior-level	Controller	ServiceCo	16.03.2021	00:50:00
19	IP19	Junior-level	Controller Content Accounting	New-TechCo	26.03.2021	00:50:00
20	IP20	Junior-level	Controller Senior Content Accountant	New-TechCo	26.03.2021	00:35:00

## 6.2. Appendix B. Question guide

### Question Guide

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① Can you give us an overview of your career path until now?

---

② Can you guide us through your current tasks and responsibilities?

---

③ What are the current accounting-/IT-systems in your company and systems in use?

---

What role does IT play in your everyday work?

- ④
- Would your job be possible without IT?
  - Which factors are essential in order to use new systems?
  - Have you ever been forced to use a system? How did you react?
- 

What is the driving force to further digitize your function and make data 'smarter'/use more sophisticated tools?

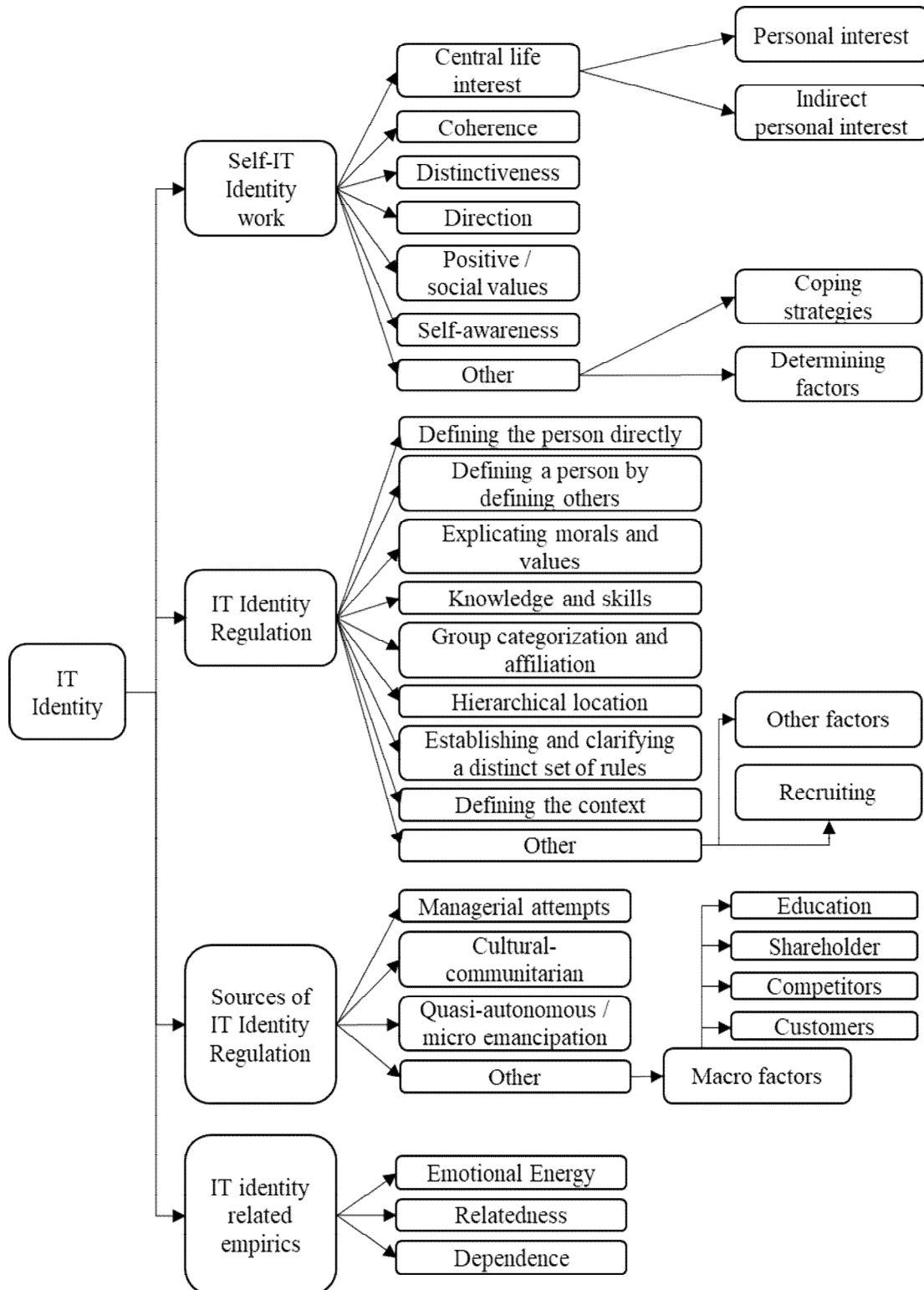
- ⑤
- External vs. Internal motivation?
  - How do you perceive these changes?
  - Did you ever participate in a system change? How did you react?
- 

How do you position yourself for the future to stay relevant in the face of further

⑥ digitization?

- Where do you see yourself in 10 years from now (especially regarding IT)?

### 6.3. Appendix C. Coding tree



#### 6.4. Appendix D. Key metrics of case companies

<b>Company</b>	<b>Revenue in €m (2020)</b>	<b># of employees</b>	<b>Categorization</b>	<b>Shareholder</b>	<b>Location - HQ</b>
New-techCo.	c. 2,200	c. 5,500	Digital native	Listed	Sweden
TechCo.	c. 25,000	c. 99,500	Tech Company	Listed	Sweden
ManufacturingCo.	c. 600	c. 3,500	Traditional	Listed	Switzerland
ServiceCo.	c. 1,500	c. 21,000	Traditional	PE-owned	Germany
Mechanical- engineeringCo.	c. 10,000	c. 39,000	Traditional	Listed	Sweden

## 7. References

- Aron, A., Aron, E. N., and Norman, C. 2003. "Self-Expansion Motivation and Including Other in the Self," in *Blackwell Handbook of Social Psychology: Interpersonal Processes*, G. J.O. Fletcher and M. S. Clark (eds.), Oxford, UK: Blackwell publishing, Ltd.
- Ahrens, T., & Chapman, C. S. (2000). Occupational identity of management accountants in Britain and Germany. *European Accounting Review*, 9(4). <https://doi.org/10.1080/09638180020024070>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2). [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Alvarez, R. (2008). Examining technology, structure and identity during an Enterprise System implementation. *Information Systems Journal*, 18(2). <https://doi.org/10.1111/j.1365-2575.2007.00286.x>
- Alvesson, M. & Willmott, H. (2002). Identity Regulation As Organizational Control: Producing the Appropriate Individual. *Journal of Management Studies*. 39. 10.1111/1467-6486.00305.
- Arnaboldi, M., Azzone, G., & Sidorova, Y. (2017). Governing social media: the emergence of hybridised boundary objects. *Accounting, Auditing and Accountability Journal*, 30(4). <https://doi.org/10.1108/AAAJ-07-2015-2132>
- Ashforth, B. E., & Mael, F. (1989). Social Identity Theory and the Organization. *Academy of Management Review*, 14(1). <https://doi.org/10.5465/amr.1989.4278999>
- Bagayogo, F. F., Lapointe, L., & Bassellier, G. (2014). Enhanced use of IT: A new perspective on post-adoption. *Journal of the Association for Information Systems*, 15(7). <https://doi.org/10.17705/1jais.00367>
- Baldvinsdottir, G., Burns, J., Nørreklit, H., & Scapens, R. W. (2009). The image of accountants: From bean counters to extreme accountants. *Accounting, Auditing and Accountability Journal*, 22(6). <https://doi.org/10.1108/09513570910980445>
- Baxter, P. & Jack, S. (2010). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *Qualitative Report*. 13. 10.46743/2160-3715/2008.1573.
- Becker, A., & Heinzlmann, R. (2017). IT and the management accountant. In *The Role of the Management Accountant: Local Variations and Global Influences*. <https://doi.org/10.4324/9781315673738>
- Beach, L. R., & Mitchell, T. R. (1987). Image Theory: Principles, goals, and plans in decision making. *Acta Psychologica*, 66(3), 201–220. [https://doi.org/10.1016/0001-6918\(87\)90034-5](https://doi.org/10.1016/0001-6918(87)90034-5)
- Bhattacharjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. *MIS Quarterly: Management Information Systems*, 25(3). <https://doi.org/10.2307/3250921>

- Bhimani, A., & Willcocks, L. (2014). Digitisation, Big Data and the transformation of accounting information. *Accounting and Business Research*, 44(4). <https://doi.org/10.1080/00014788.2014.910051>
- Boudreau, M. C., Serrano, C., & Larson, K. (2014). IT-driven identity work: Creating a group identity in a digital environment. *Information and Organization*, 24(1). <https://doi.org/10.1016/j.infoandorg.2013.11.001>
- Brown, A. (2015). Identities and Identity Work in Organizations. *International Journal of Management Reviews*. 17. 10.1111/ijmr.12035.
- Burke, P. J., and Stets, J. E. 2009. *Identity Theory*, New York: Oxford University Press.
- Burns, J., & Baldvinsdottir, G. (2005). An institutional perspective of accountants' new roles—the interplay of contradictions and praxis. *European Accounting Review*, 14(4). <https://doi.org/10.1080/09638180500194171>
- Byrne, S., & Pierce, B. (2018). Exploring management accountants' role conflicts and ambiguities and how they cope with them. *Qualitative Research in Accounting and Management*, 15(4). <https://doi.org/10.1108/QRAM-11-2016-0083>
- Caglio, A. (2003). Enterprise Resource Planning systems and accountants: towards hybridization? *European Accounting Review*, 12(1). <https://doi.org/10.1080/0963818031000087853>
- Carter, M. & Grover, V. (2015). Me, My Self, and I(T): Conceptualizing Information Technology Identity and its Implications. *MIS Quarterly*. 39. 931-958. 10.25300/MISQ/2015/39.4.9.
- Choi, J., Kushner, K. E., Mill, J., & Lai, D. W. L. (2012). Understanding the language, the culture, and the experience: Translation in crosscultural research. *International Journal of Qualitative Methods*, 11(5). <https://doi.org/10.1177/160940691201100508>
- Collier, D., & Mahoney, J. (1996). Insights and Pitfalls: Selection Bias in Qualitative Research. *World Politics*, 49(1). <https://doi.org/10.1353/wp.1996.0023>
- Compeau, D., Higgins, C. A., & Huff, S. (1999). Social cognitive theory and individual reactions to computing technology: A longitudinal study. *MIS Quarterly: Management Information Systems*, 23(2). <https://doi.org/10.2307/249749>
- Dechow, N., & Mouritsen, J. (2005). Enterprise resource planning systems, management control and the quest for integration. *Accounting, Organizations and Society*, 30(7–8). <https://doi.org/10.1016/j.aos.2004.11.004>
- Denzin, N. K.(1978).*The research act: A theoretical introduction to sociological methods*.New York: Praeger.
- Drew, B. J. (2018, July 1). Merging accounting with 'big data' science. *Journal of Accountancy*. <https://www.journalofaccountancy.com/issues/2018/jul/big-data-and-accounting.html> accessed the 05.05.2021 at 16:02
- Down, S., & Reveley, J. (2009). Between narration and interaction: Situating first-line supervisor identity work. *Human Relations*, 62(3). <https://doi.org/10.1177/0018726708101043>

- Du Gay, P. (1996). 'Making up managers: enterprise and the ethos of bureaucracy'. In Clegg, S. and Palmer, G. (Eds), *The Politics of Management Knowledge*. London: Sage.
- Edmondson, A. C., & Mcmanus, S. E. (2007). Methodological fit in management field research. *Academy of Management Review*, 32(4). <https://doi.org/10.5465/AMR.2007.26586086>
- Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *Academy of Management Review*, 14(4). <https://doi.org/10.5465/amr.1989.4308385>
- Ezzamel, M., & Burns, J. (2005). Professional competition, economic value added and management control strategies. In *Organization Studies* (Vol. 26, Issue 5). <https://doi.org/10.1177/0170840605054598>
- Ezzamel, M., & Willmott, H. (1998). Accounting for teamwork: A critical study of group-based systems of organizational control. *Administrative Science Quarterly*, 43(2). <https://doi.org/10.2307/2393856>
- Friedman, A. L., & Lyne, S. R. (2001). The beancounter stereotype: Towards a general model of stereotype generation. *Critical Perspectives on Accounting*, 12(4). <https://doi.org/10.1006/cpac.2000.0451>
- Giddens, A. (1991). *Modernity and Self-Identity. Self and Society in the Late ModernAge*. Stanford: Stanford University Press.
- Goretzki, L., Messner, M. & Wurm, M. (Working paper). Fashionable practices and occupational identities: Hype and ambiguity as challenges for data scientists, Working Paper
- Goretzki, L., Lukka, K., & Messner, M. (2018). Controllers' use of informational tactics. *Accounting and Business Research*, 48(6). <https://doi.org/10.1080/00014788.2017.1407627>
- Goretzki, L., & Messner, M. (2018). Backstage and frontstage interactions in management accountants' identity work. *Accounting, Organizations and Society*, 74. <https://doi.org/10.1016/j.aos.2018.09.001>
- Goretzki, L., Strauss, E., & Weber, J. (2013). An institutional perspective on the changes in management accountants' professional role. *Management Accounting Research*, 24(1). <https://doi.org/10.1016/j.mar.2012.11.002>
- Hassard, J., Holliday, R. and Willmott, H. C. (Eds) (2000). *Body and Organization*. London: Sage.
- Heinzelmann, R. (2018). Occupational identities of management accountants: the role of the IT system. *Journal of Applied Accounting Research*, 19(4). <https://doi.org/10.1108/JAAR-05-2017-0059>
- Heinzelmann, R. (2017). Accounting logics as a challenge for ERP system implementation: A field study of SAP. *Journal of Accounting and Organizational Change*, 13(2). <https://doi.org/10.1108/JAOC-10-2015-0085>
- Horngren, C., S. Datar, and M. Rajan. 2012. *Cost Accounting: A Managerial Emphasis*. 14th edition. Upper Saddle River, NJ: Prentice Hall.

- Hughes, E.C. (1951). Work and Self. In J.H. Roher, & M. Sherif, *Social Psychology at the Crossroads*. New York: Harper & Row, pp. 313-323 (reprinted in *The sociological eye. Selected papers*, New Brunswick: Transaction Publishers, 338-347).
- Jack, L., & Kholeif, A. (2008). Enterprise Resource Planning and a contest to limit the role of management accountants: A strong structuration perspective. *Accounting Forum*, 32(1). <https://doi.org/10.1016/j.accfor.2007.11.003>
- Järvenpää, M. (2007). Making business partners: A case study on how management accounting culture was changed. *European Accounting Review*, 16(1). <https://doi.org/10.1080/09638180701265903>
- Jones, M. R., & Karsten, H. (2008). Giddens's structuration theory and information systems research. In *MIS Quarterly: Management Information Systems* (Vol. 32, Issue 1). <https://doi.org/10.2307/25148831>
- Lamb, R., & Davidson, E. (2005). Information and communication technology challenges to scientific professional identity. *Information Society*, 21(1). <https://doi.org/10.1080/01972240590895883>
- Langley, A. (1999). Strategies for theorizing from process data. *Academy of Management Review*, 24(4). <https://doi.org/10.5465/AMR.1999.2553248>
- Lapointe, L., & Rivard, S. (2005). A multilevel model of resistance to information technology implementation. In *MIS Quarterly: Management Information Systems* (Vol. 29, Issue 3). <https://doi.org/10.2307/25148692>
- Lee, Y., Lee, J., & Lee, Z. (2006). Social Influence on Technology Acceptance Behavior: Self-Identity Theory Perspective. *Data Base for Advances in Information Systems*, 37. <https://doi.org/10.1145/1161345.1161355>
- Lillis, A. M., & Mundy, J. (2005). Cross-Sectional Field Studies in Management Accounting Research—Closing the Gaps between Surveys and Case Studies. *Journal of Management Accounting Research*, 17(1). <https://doi.org/10.2308/jmar.2005.17.1.119>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage Publications.
- Marrone, M., & Hazelton, J. (2019). The disruptive and transformative potential of new technologies for accounting, accountants and accountability: A review of current literature and call for further research. *Meditari Accountancy Research*, 27(5). <https://doi.org/10.1108/MEDAR-06-2019-0508>
- Mathers, N., Fox, N. & Hunn, A. (2000) 'Using Interviews in a Research Project' in Wilson, A., Williams, M. & Hancock, B. (eds.) *Research Approaches in Primary Care*. Abingdon: Radcliffe Medical Press
- Morales, J., & Lambert, C. (2013). Dirty work and the construction of identity. An ethnographic study of management accounting practices. *Accounting, Organizations and Society*, 38(3). <https://doi.org/10.1016/j.aos.2013.04.001>
- Myers, M., (2008). *Qualitative Research in Business & Management*. Sage Publications

- Nach, H., & Lejeune, A. (2010). Coping with information technology challenges to identity: A theoretical framework. In *Computers in Human Behavior* (Vol. 26, Issue 4). <https://doi.org/10.1016/j.chb.2009.12.015>
- Newman, M., & Westrup, C. (2005). Making ERPs work: Accountants and the introduction of ERP systems. *European Journal of Information Systems*, 14(3). <https://doi.org/10.1057/palgrave.ejis.3000539>
- Payne, R. (2014). Discussion of Digitisation, Big Data and the transformation of accounting information by Alnoor Bhimani and Leslie Willcocks (2014). In *Accounting and Business Research* (Vol. 44, Issue 4). <https://doi.org/10.1080/00014788.2014.910053>
- Payne, S. (1991). 'A proposal for corporate ethical reform: the ethical dialogue group'. *Business & Professional Ethics Journal*, 10,1,67–88.
- Ravasi, D., & Canato, A. (2013). How do I know who you think you are? A review of research methods on organizational identity. *International Journal of Management Reviews*, 15(2). <https://doi.org/10.1111/ijmr.12008>
- Ridder, H. G. (2017). The theory contribution of case study research designs. *Business Research*, 10(2). <https://doi.org/10.1007/s40685-017-0045-z>
- Rikhardsson, P., & Kræmmergaard, P. (2006). Identifying the impacts of enterprise system implementation and use: Examples from Denmark. *International Journal of Accounting Information Systems*, 7(1). <https://doi.org/10.1016/j.accinf.2005.12.001>
- Saga, V. L., and Zmud, R. W. 1994. "The Nature and Determinantsof IT Acceptance, Routinization and Infusion," in *Diffusion,Transfer, and Implementation of Information Technology* L. Levine (ed.), Amsterdam: Elsevier, pp. 67-86
- Sánchez-Rodríguez, C., & Spraakman, G. (2012). ERP systems and management accounting: A multiple case study. *Qualitative Research in Accounting and Management*, 9(4). <https://doi.org/10.1108/11766091211282689>
- Scapens, R. W., & Jazayeri, M. (2003). ERP systems and management accounting change: opportunities or impacts? A research note. *European Accounting Review*, 12(1). <https://doi.org/10.1080/0963818031000087907>
- Schwarz, A., & Chin, W. (2007). Looking forward: Toward an understanding of the nature and definition of IT acceptance. *Journal of the Association for Information Systems*, 8(4). <https://doi.org/10.17705/1jais.00123>
- Snow, D.A., and Anderson, L. (1987). Identity work among the homeless: The verbal construction and avowal of personal identities. *American Journal of Sociology*, 92, pp. 1336-1371.
- Stein, M. K., Galliers, R. D., & Markus, M. L. (2013). Towards an understanding of identity and technology in the workplace. *Journal of Information Technology*, 28(3). <https://doi.org/10.1057/jit.2012.32>
- Stets, J. E., & Biga, C. F. (2003). Bringing Identity Theory into Environmental Sociology. In *Sociological Theory* (Vol. 21, Issue 4). <https://doi.org/10.1046/j.1467-9558.2003.00196.x>

- Stets, J. E., and Burke, P. J. 2000. "Identity Theory and Social Identity Theory," *Social Psychology Quarterly* (63:2), pp.160-178.
- Sveningsson, S., & Alvesson, M. (2003). Managing managerial identities: Organizational fragmentation, discourse and identity struggle. *Human Relations*, 56(10). <https://doi.org/10.1177/00187267035610001>
- Terrion, J. L., & Ashforth, B. E. (2002). From "I" to "we": The role of putdown humor and identity in the development of a temporary group. *Human Relations*, 55(1). <https://doi.org/10.1177/0018726702055001606>
- Thornborrow, T., & Brown, A. D. (2009). "Being Regimented": Aspiration, discipline and identity work in the british parachute regiment. *Organization Studies*, 30(4). <https://doi.org/10.1177/0170840608101140>
- Turner, J. (1982). 'Towards a cognitive redefinition of the social group'. In Tajfel, H. (Ed.), *Social Identity and Intergroup Relation*. Cambridge: Cambridge University Press.
- Turner, J. (1984). 'Social identification and psychological group formation'. In Tajfel, H.(Ed.), *The Social Dimension*. Vol. 2. Cambridge: Cambridge University Press.
- Vaast, E., & Pinnsonneault, A. (2020). When Digital Technologies Enable and Threaten Occupational Identity: The Delicate Balancing Act of Data Scientists. *MIS Quarterly*, forthcoming.
- Vaivio, J. (1999). Examining "the quantified customer." *Accounting, Organizations and Society*, 24(8). [https://doi.org/10.1016/S0361-3682\(99\)00008-2](https://doi.org/10.1016/S0361-3682(99)00008-2)
- Vignoles, V. L., Schwartz, S. J., and Luyckx, K. 2011. "Introduction: Toward an Integrative View of Identity," in *Handbook of Identity Theory and Research: Vol. 1– Structures and Processes*, S. J. Schwartz, K. Luyckx and V. L. Vignoles (eds.), New York: Springer, pp. 1-27.
- Vodanovich, S., Sundaram, D., & Myers, M. (2010). Digital natives and ubiquitous information systems. *Information Systems Research*, 21(4). <https://doi.org/10.1287/isre.1100.0324>
- Watson, T. J. (2008). Managing identity: Identity work, personal predicaments and structural circumstances. *Organization*, 15(1). <https://doi.org/10.1177/1350508407084488>
- Watson, T. J. (2009). Narrative, life story and manager identity: A case study in autobiographical identity work. *Human Relations*, 62(3). <https://doi.org/10.1177/0018726708101044>
- Whittington, R., & Whipp, R. (1992). Professional Ideology and Marketing Implementation. *European Journal of Marketing*, 26(1). <https://doi.org/10.1108/03090569210007792>
- Williams, M., & Moser, T. (2019). The Art of Coding and Thematic Exploration in Qualitative Research. *International Management Review*, 15(1).

- Willmott, H. (1997). Rethinking management and managerial work: Capitalism, control, and subjectivity. *Human Relations*, 50(11).  
<https://doi.org/10.1177/001872679705001101>
- Willmott, H. (1998). 'Making learning critical'. *Systems Practice*, 10,6,749–71.
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed.). Thousand Oaks, CA: Sage.