LEADING CHANGE ACROSS THE ORGANIZATION

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ABSTRACT

Organizational change processes frequently cut across multiple units or domains. Such changes processes commonly involve particular challenges related to intergroup tensions engendered by divergent perspectives, objectives and identities. Accomplishing organizational change requires managing such tensions productively.

Organizations may choose to establish leadership roles specifically dedicated to leading change across the organization. Two such roles described within information systems research are process owners, who are responsible for business process improvement and innovation, and chief digital officers, who manage large-scale digital transformation. The purpose of this thesis is to develop an understanding of how intergroup leadership roles like process owners and chief digital officers contribute to managing intergroup tensions hindering organizational change.

This thesis consists of three articles. I conducted a literature review of research on process owners, a Delphi study investigating how organizations can make process ownership work and an interview-based study of how chief digital officers understand and manage tensions related to digital transformation.

My findings provide a deeper understanding of the role of process owners and chief digital officers as intergroup leaders, and of how they manage intergroup tensions and thereby facilitate organizational change through connecting different groups involved. The findings also illuminate the challenges these intergroup leaders face and how these challenges can be addressed. This thesis contributes to literature on business process management and on digital transformation, but also to our understanding of intergroup leadership in the context of organizational change.
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INTRODUCTION
Organizational change is rarely easily accomplished (Balogun & Hailey, 2008; Beer & Nohria, 2000), often because it is rife with tensions (Luscher et al., 2006). These tensions can lead to anxiety, power struggles, conflict and resistance that obstruct necessary changes (Lüscher & Lewis, 2008). Research indicates that leaders play an important part in managing tensions (Abdallah et al., 2011; Dameron & Torset, 2014) and accomplishing organizational change (Higgs & Rowland, 2005). Most academic literature on organizational change has examined traditional leadership roles, where leaders and followers share formal group membership (Hogg et al., 2012), such as in the case of a middle manager leading a unit. However, organizational change frequently involves more than one unit and necessitates leading employees from different groups and inducing intergroup collaboration. Change processes that cut across multiple units involve particular and severe challenges related to intergroup tensions, due to divergent perspectives, objectives and identities (Hogg, et al., 2012). In order to manage intergroup tensions, intergroup leadership (Pittinsky & Simon, 2007) may be required, involving a different leadership approach than leadership within the same group typically entails. However, academic research has only examined the role and contribution of intergroup leaders to a limited extent (Hogg, et al., 2012).

Organizations may choose to establish leadership roles specifically dedicated to leading change across the organization. Two such roles described within information systems research are process owners, appointed in organizations practicing business process management, and chief digital officers, appointed in organizations undertaking digital transformation. Process owners aim to achieve and maintain successful cross-functional business processes through process control, incremental changes and process innovation (Hammer & Stanton, 1999; Siemieniuch & Sinclair, 2002). Chief digital officers manage large-scale transformation, which typically includes a large number of projects and involves the whole organization (Singh & Hess, 2017; Tumbas et al., 2017). Both process change and digital transformation necessitate extensive cross-unit collaboration.

The purpose of this thesis is to develop an understanding of how such dedicated intergroup leadership roles contribute to organizational change. The overall research question of the thesis is:

*How do dedicated intergroup leadership roles like process owners and chief digital officers contribute to managing intergroup tensions hindering organizational change?*
This thesis consists of three articles, of which the two first focus on process owners and the third on chief digital officers. Through a systematic literature review, the first article investigates how research to date has contributed to our understanding of the role of process owners. The second article studies how organizations can make process ownership work based on a Delphi study. The third article is based on interviews with chief digital officers and explores how they understand and manage organizational tensions related to digital transformation.

My findings contribute to a deeper understanding of the roles of process owners and chief digital officers in organizational change processes, in particular regarding the management of tensions between different groups involved. The findings also illuminate the challenges intergroup leaders face and how these can be addressed.

In this introductory chapter, I start by providing a brief outline of the theoretical background that has informed this research. I continue by discussing methodological choices related to the three studies. I then briefly present the three articles before discussing the theoretical contribution of this thesis, as well as its practical implications. I conclude by commenting on possible limitations and opportunities for further research.

THEORETICAL BACKGROUND

Introduction
My research lies at the nexus of the fields of information systems research and leadership and organizational change, so it is inspired by research streams related to both fields. This section includes an outline of extant literature from these fields that is particularly relevant to this thesis. I start by briefly examining past research on organizational change and change leadership. Furthermore, I provide an introduction to intergroup tensions and intergroup leadership. Finally, I describe business-process management and digital transformation, with a particular emphasis on tensions and the roles of process owners and chief digital officers in managing these, respectively.
Leading organizational change

Organizational change can be described through different dimensions, such as the rate of occurrence, scale of change, and how changes are elicited (Todnem By, 2005). Starting with the rate of occurrence, research on organizational change distinguishes between two different traditions: the punctuated-equilibrium paradigm, which implies that change is ‘episodic, discontinuous, and intermittent’ vs. the gradualist paradigm, which asserts that change is ‘continuous, evolving, and incremental’ (Weick & Quinn, 1999:362). Furthermore, the scale of change can be characterized along a continuum, from fine-tuning organizational elements to organizational transformation (Greenwood & Hinings, 1996). As to how these changes come about, researchers discuss whether organizational change should be viewed as planned or emergent (Burnes, 2011).

Extant research describes central challenges related to organizational change, particularly as to employees’ reaction to change (Choi, 2011; Oreg et al., 2011), often in the form of resistance (Achilles & Arthur, 1999; Pardo del Val & Martínez Fuentes, 2003). In response to the challenge of accomplishing successful change, researchers have developed specific models for change management, describing stages in the change process and different leadership behaviors and activities that leaders should undertake (e.g. Higgs & Rowland, 2005; Kotter, 1995; Lewin, 1947; Rosenbaum et al., 2018).

Organizational change aims to improve organizational performance (Carter et al., 2013), but frequently necessitates collaboration between different groups, such as units and domains. However, most leadership models do not account for leadership across such organizational boundaries (Hogg, et al., 2012), and few of the leadership studies that describe the relationship between leadership and change consider the complexity of intraorganizational processes (Battilana et al., 2010). To lead change across different groups, a different approach is required: intergroup leadership (Pittinsky & Simon, 2007), i.e., ‘the leadership of collaborative efforts of more than one formal group or organization toward a joint goal, in which the purpose of the collaboration relies on the presence of these groups or organizations’ (Hogg, et al., 2012:234).

In the following sections, I examine extant research indicating why leading change across group or organizational boundaries requires intergroup leadership, starting with research on intergroup tensions before discussing how such tensions might be managed.
**Intergroup tensions**

Tensions are a natural and inherent aspect of organizations (Clegg et al., 2002; Jarzabkowski et al., 2013). Intraorganizational tensions can be understood as a relationship between opposing elements, such as divergent and competing voices, demands, goals, interests, values, perspectives, identities, or practices (Farjoun, 2016; Lewis, 2000; Putnam et al., 2016).

Tensions can arise between different parts of the organization (e.g., individuals, groups, units) and between parts of the organization and the organizational whole (Lewis, 2000). Social-identity theory (Tajfel & Turner, 1979) positions divergent identities as a source of intraorganizational tensions (Albert & Whetten, 1985). A social identity can be defined as ‘that part of an individual’s self-concept which derives from his knowledge of his membership of a group (or groups) together with the value and the emotional significance attached to the membership’ (Tajfel, 1978:63). A social identity helps individuals define reality (Hardin & Higgins, 1996) and answer questions such as ‘Who am I?’ and ‘Who are we?’ However, answering such questions also implies defining ‘Who are they?’ (Albert et al., 2000), thereby comparing and constructing a distinction between “us” and “them.” A strong identification with a group – an *ingroup* – typically also involves the definition of an *outgroup*, thereby providing ‘a sense of belonging and a sense of distinctiveness’ (Brewer, 1991:475). This process of identification frequently involves constructing biases that pave the way for intergroup conflict (Tajfel & Turner, 1979).

Organizations are networks of groups, each with its own identity (Van Knippenberg & Van Schie, 2000). Organizational identities can be characterized in terms of elements such as organizational objectives, values, strategies, and traditions (Albert & Whetten, 1985) that attach meaning to the subject (Ashforth & Mael, 1996). Individuals within an organization might wear many hats, with organizational identities nested within each other (Ashforth & Johnson, 2001). For instance, an identity related to a specific job can be nested within an identity related to a unit or work group that can be nested within an identity related to the organization as a whole (Ashforth & Mael, 1989). Other identities can be cross-cutting, such as identities related to cross-functional work committees, task forces, unions, or other interest groups (Ashforth & Johnson, 2001). Identities often overlap, but also might involve diverging perspectives and objectives.
Identities can hold different degrees of importance to individuals. A strong, higher-order identity (e.g., an organizational identity) (Ashforth & Johnson, 2001) is important, as it increases the chance of employees aligning with the organization, rather than with any subgroups. Ashforth and Johnson (2001) suggest that a higher-order identity will be more important than lower-order identities (e.g., work group/unit identity) under certain conditions. These include when the organization’s identity is connected strongly to particular values that the individual identifies with when the organization has high status (Mael & Ashforth, 1992), when the organization is under constant threat from external forces (this threat thereby eliciting an internal front), or when the organization is structured in a way that reduces group differences or makes it necessary to get directions from the organization’s upper level. However, in the absence of such conditions, the lower-order identity will become the most important (Van Knippenberg & Van Schie, 2000), as a ‘gravitational tug toward lower-order identities’ seems to exist (Ashforth & Johnson, 2001:37). The lower-order identity is often the most concrete (Feldman, 1979); thus, it is easier to relate to it. Also, whereas an identity with the overall organization is shared by many, lower-order identities are more exclusive, permitting a distinction between one’s own group and others, thereby fulfilling a need for distinctiveness (Brewer, 1991). Furthermore, van Knippenberg and van Schie (2000) propose that lower-order identities are stronger because (a) individuals likely have more in common with members of their own unit than with the organization in general, and (b) organizational members more frequently encounter organizational employees outside their own unit than from other organizations. Therefore, the ingroup-vs.-outgroup distinction is accomplished more easily at a lower level.

Identity and identification impact motivation and both individual and collective behaviors (Albert, et al., 2000). Organizational identification gives employees a feeling of being part of a collective and positively affects job involvement, job satisfaction, commitment, and employee performance (Lee et al., 2015). However, when work-group identification is stronger than organizational identification, the former becomes the strongest determinant of attitudes and behavior (Van Knippenberg & Van Schie, 2000). Employees who identify more strongly with their unit are likely to take a unit perspective and pursue unit goals, rather than organizational goals, even if by doing so, they oppose the organization’s objectives as a whole. Furthermore, while identification with a group can ease collaboration within a unit, it can cause tensions and obstruct collaboration between units due to ingroup-vs.-outgroup biases. Such tensions are aggravated by conditions that promote rivalries among units, such as limited resources and
reward systems that elicit competition, rather than collaboration (Ashforth & Mael, 1989; Friedkin & Simpson, 1985). Tensions between the organization’s subunits also are interrelated with tensions between units and the organization as a whole, as they weaken organizational identification and lead to units pursuing their own objectives, rather than those of the organization (Kramer, 1991; van Knippenberg, 2003).

**Managing intergroup tensions**

Managing tensions is an ongoing, iterative, and dynamic process (Abdallah, et al., 2011; Jarzabkowski, et al., 2013). Extant research has demonstrated that seeking to avoid or resolve tensions frequently proves to be counterproductive (Smith & Lewis, 2011). Instead, tensions should be viewed as natural and productive, and opposing poles as important and interrelated parts of a whole (Jarzabkowski, et al., 2013). The central issue becomes how to cope with, work within, and explore the benefits of tensions (Lewis, 2000). Researchers have identified different proactive strategies for managing tensions. *Acceptance* involves acknowledging the tension and learning to live with it (Lewis, 2000). *Confrontation* exposes tensions and opens them up for discussion (Jarzabkowski, et al., 2013; Lewis, 2000). *Transcendence* aims to develop an understanding of the poles as not competing, but rather as complementary, and to integrate the poles into a form of synthesis or unified whole (Abdallah, et al., 2011; Poole & Van de Ven, 1989). Finally, Seo et al. (2004:101) proposed managing tensions through *connection*, i.e., seeking ways to embrace differences and make room for opposing voices, so that all voices ‘remain connected, use each other to generate insights, and (stay) open to multiple and evolving interpretations’.

Researchers have discussed how leaders can shape followers’ identities (Avolio et al., 2009; Lord & Brown, 2001), influence the perceived salience of different identities (Pratt & Foreman, 2000) and effectively navigate intergroup tensions (Hogg & Terry, 2000). Some researchers have advocated managing intergroup tensions by trying to establish a superordinate identity in which intergroup boundaries are effaced and former outgroup members are recategorized as ingroup members (Dovidio et al., 1997; Gaertner et al., 1989). However, more recently, Hogg et al. (2012) argued that this approach entails several disadvantages. Building a superordinate identity and blurring intergroup boundaries pose a threat to a group’s identity and its distinctiveness, breeding resistance. Furthermore, leaders often are viewed as closer to some groups than to others. For a leader, being viewed as prototypical of a group – i.e., as part of an ingroup – is advantageous in leading this particular group (Van Knippenberg & Hogg, 2003).
However, other groups will not perceive the leader as neutral, but as ‘one of them’ (Hogg, et al., 2012:236), making it difficult for the leader to convince outgroups’ members to trust him or her.

Therefore, Hogg et al. (2012) conclude that leaders seeking to manage intergroup tensions by building an overarching collective identity are unlikely to succeed. Instead, they propose that leaders should seek to foster a sense of intergroup relational identity, which entails ‘self-definition in terms of one’s group membership that incorporates the group’s relationship with another group as part of the group’s identity’ (p. 233). An intergroup relational identity focuses on how both groups contribute to an overarching goal through a collaborative relationship, but preserves and values the existing group identities and their differences. Whereas a superordinate identity would focus on similarities and seek to diminish differences, an intergroup relational identity is based on groups’ unique roles in the collaborative relationship and ‘celebrates subgroup distinctiveness and the constructive relations between subgroups that partially define the superordinate identity’ (Hogg et al., 2017:573). Managing tensions through building an intergroup relational identity thus relies on a strategy of connecting, but not unifying the poles (Seo, et al., 2004). As promoting an intergroup relational identity thereby does not present a threat to current identities, this approach to managing intergroup tensions does not breed resistance in the subgroups, nor does it cause group members to distrust intergroup leaders.

An effective intergroup leader should provide meaning to the intergroup relationship through leadership rhetoric, combined with boundary spanning. Leadership rhetoric emphasizes the advantages of intergroup collaboration, thereby providing meaning to an intergroup relational identity. Engaging in boundary spanning – i.e., ‘significant transactions with outgroup members’ (Richter et al., 2006:1253) – helps a leader both build an intergroup relational identity and model this identity. In addition, leaders should facilitate positive contact between subgroups (Dovidio et al., 2011; Dovidio et al., 2017).

**Business-process management and the role of process owners**

A fundamental concern in business process management (BPM) is optimization of customer value through the management of end-to-end business processes and performance (Hammer, 2010; Smart et al., 2009). Key BPM dimensions are process control and process change (Ng et al., 2015). Business process management should be a continuous practice in the organization.
adapted to different business contexts (vom Brocke et al., 2016). Extant research on BPM describes different practices related to controlling and improving processes, such as process modeling, process performance measurement, and different process improvement methods. However, previous research on organizational and managerial aspects related to process management has been more limited. Notable exceptions include the definition of an organizational culture supporting BPM, of which research has concluded on customer-centricity, focus on excellence, reliability, and teamwork as essential values (Schmiedel et al., 2013a; Schmiedel et al., 2014).

Business process management builds on the fields of total quality management and business process reengineering (Hammer, 2010). While total quality management encourages continuous, incremental process change, business process reengineering entails revolutionary, transformational change by redesigning a large number of business processes over a short period of time. BPM has been criticized (Benner & Tushman, 2002) for placing too much emphasis on incremental change and exploitation, i.e., activities related to ‘refinement, choice, production, efficiency, selection, implementation, execution’ at the expense of exploration, i.e., activities related to ‘search, variation, risk taking, experimentation, play, flexibility, discovery, innovation’ (March, 1991:71). However, the view of BPM that has evolved in recent years suggests that process management should encompass both incremental and radical process change (Ng, et al., 2015; Niehaves et al., 2013; Škerlavaj et al., 2007; vom Brocke & Schmiedel, 2015).

The concept of “business process” lacks a commonly acknowledged definition, but traditionally has been defined in terms of activities, input, and output, as in the following synthesized definition (Palmberg, 2009:207): ‘a horizontal sequence of activities that transforms an input (need) to an output (result) to meet the needs of customers or stakeholders’. Such definitions take a mechanistic perspective and disregard human and interactional aspects of business processes (Melão & Pidd, 2000). A comprehensive understanding of the concept should include a stronger emphasis on the people involved in the process and the interaction between these, and on other resources available for the execution of a process (Siemieniuch & Sinclair, 2002). Melão and Pidd (2000:120-121) suggest that business processes, as a social construct, might be defined as a ‘purposeful human activity system consisting of a set of logically interconnected activities through which actors convert inputs into some outputs for customers’.
Processes represent the collective effort of people from different organizational units and can, in and of themselves, be viewed as cross-functional organizational units (Iden, 2012, 2018). The responsibility of leading processes often is assigned to process owners, who hold a key role in process-oriented organizations (Armistead et al., 1999; Hammer, 2007; Iden, 2012; Smart, et al., 2009) and have been described as a critical success factor for business process management (Trkman, 2010). Established process ownership represents an organizational commitment to process management (Hammer & Stanton, 1999) and an indicator of top management’s perception of BPM as a basis for business change (Zabjek et al., 2009). A process owner is responsible for making process change happen (Hammer & Champy, 1993), but faces significant challenges related to operating within a landscape characterized by multiple stakeholders and groups with differing perspectives and objectives.

The role, in itself, does not entail formal supervisory responsibilities (Harrington, 1991). However, process owners lead a process team, which assists the process owner (Nilsson & Sandoff, 2015; Rahimi et al., 2016). Furthermore, process owners exercise leadership of process employees, according to Yukl’s (2010:8) definition of leadership, by ‘facilitating individual and collective efforts to accomplish shared objectives’ and by motivating process employees and making these ‘understand and agree about what needs to be done and how to do it’.

Commonly, organizations practicing BPM establish a matrix structure with processes cutting across functional units (Nesheim, 2011; Vanhaverbeke & Torremans, 1999). Being responsible for process control and improvement, process owners’ role entails not only supporting, but also controlling, work performed by functional units. Furthermore, process employees must report to two leaders – the process owner and a functional manager. Thus, the matrix structure and the role of the process owner within this structure create inherent tensions between process owners and the functional organization (Hammer & Stanton, 1999; Nesheim, 2011). In addition, tensions arise due to divergent priorities (Hellström et al., 2010; Siemieniuch & Sinclair, 2002). In the two articles on process ownership included in this thesis, I study the role of process owners and how tensions between the two parts of the matrix can be managed.

**Digital transformation and the role of chief digital officers**

The term digital transformation reflects the significant impact digital technologies can have on individuals, organizations, and society (Haffke et al., 2016; Lucas Jr et al., 2013). Digital technologies can elicit fundamental changes in business operations and revenue generation
(Veit et al., 2014), by impacting elements of the organization’s business model (Nylén & Holmström, 2015; Veit, et al., 2014; Øiestad & Bugge, 2014). Digital transformation not only encompasses product, service or process innovation, but also enhancing existing products, services and processes incrementally by means of digital technologies (Berghaus & Back, 2016; Fitzgerald et al., 2014). Lucas Jr. et al. (2013) suggested that the term is appropriate if the use of digital technology leads to at least three of the following outcomes: transformed business processes, relationships, user experience, customer base or markets, new organizations, or disruptive impact on the individual, firm, or society level.

Facing the threats and opportunities related to digital technologies (Lucas & Goh, 2009; Teece, 2010) necessitates rethinking and restructuring the organization (Nwankpa & Roumani, 2016) and its business logics (Piccinini et al., 2015). Organizational values (Karimi & Walter, 2015), culture (Hartl & Hess, 2017; Lucas & Goh, 2009; Philip & McKeown, 2004) and capabilities (Karimi & Walter, 2015; Nwankpa & Roumani, 2016; Teece, 2007) must be adapted to the new digital reality. Digital transformation thus also comprises organizational transformation (Besson & Rowe, 2012), as described by Kane et al. (2016:14): ‘digital transformation is not just about implementing more and better technologies. It involves digital congruence — aligning your company’s culture, people, structure, and tasks’.

Digital transformation rests upon an understanding of technology as no longer merely supporting the business (Kahre et al., 2017). The focus of the organization should be ‘to generate business value from IS, (…) a multifaceted and complex challenge’ (Peppard, 2018:81). Meeting this challenge requires a digital strategy taking a business-centric perspective (Matt et al., 2015), and aligning or even unifying the IT strategy with the business strategy (Bharadwaj et al., 2013; Mithas et al., 2013; Yeow et al., 2018). Developing and implementing a strategy for a digital transformation should be seen as an ongoing process (Besson & Rowe, 2012; Yeow, et al., 2018) as the organization seeks to respond to rapidly-changing market conditions (Ross et al., 2016) and customer demands, technological developments, and internal resources and capabilities (Galliers, 2011; Yeow, et al., 2018).

Whereas IS governance and development traditionally have been the concern of the IT department (Peppard, 2018), digital transformation and a digital business strategy position IS as an integral part of the organization as a whole (Charias & Hess, 2016; Yeow, et al., 2018). Digital transformation can be approached bottom-up, originating from various digitalization
projects in different units (Berghaus & Back, 2017; Charias & Hess, 2016), or as a centralized approach starting with executives defining an overall digital strategy (Bharadwaj, et al., 2013; Matt, et al., 2015). Often digital transformation involves a combination of planned and emergent strategy (Charias, 2017), however Marabelli and Galliers (2017) describe a tension between these two approaches.

Traditionally, IS development has been headed by IT departments led by a chief information officer (CIO), though the mutual understanding, support, and relations between the IT department and the business units have frequently proved inadequate (Peppard, 2018). The digital transformation relies on the involvement of the whole organization and requires extensive collaboration between business units and between business units and the IT department (Gregory et al., 2015), as ‘the necessary responsibilities and knowledge to generate business value from IS are distributed throughout the organization’ (Peppard, 2018:82). This collaboration can however turn problematic, as tensions between different units and domains frequently surface.

Often, organizations do not perceive the CIO as representative of the necessary insight, cross-functional overview, and agility required for exploiting digital technologies. Therefore, a new role has emerged, as organizations appoint a chief digital officer (CDO) to lead the digital transformation (Haffke, et al., 2016). CDOs may be in charge of ensuring adequate organizational insight into technological opportunities, customer needs, and the competitive environment, and of developing and implementing digital strategies. CDOs may also be responsible for coordinating digitalization projects, motivating for change, and acting as a liaison between business and IT functions in the organization (Haffke, et al., 2016; Singh & Hess, 2017). In the third article included in this thesis, I study how CDOs seek to manage tensions productively in order to accomplish the digital transformation.
METHODOLOGICAL CHOICES

This thesis comprises a systematic literature review (article 1) and two empirical studies: a Delphi study (article 2) and a study based on interviews (article 3). In the following, I discuss the underlying philosophical assumptions of the empirical studies presented in this thesis and elaborate on the research design and methodological choices.

Research paradigm

I start by discussing the positioning of my research with respect to ontology and epistemology — the fundamental questions of the nature of reality and of how we as researchers may seek knowledge on this reality (Creswell, 2007).

I see reality as socially constructed and thus adhere to a social constructivist paradigm. Rather than a single, universal, objective truth advocated within the positivist paradigm, I see organizations as consisting of multiple, subjective realities created and shaped through language, interpretation, and interaction. Seeking knowledge of organizations and organizational phenomena, then, involves exploring these different realities, as they are ‘lived, felt, undergone, made sense of and accomplished by human beings’ (Schwandt, 1997:84).

Having positioned my research within the social constructivist paradigm, I should comment briefly on the Delphi study that I conducted (article 2). Researchers continue to debate the research paradigm of the Delphi method (Keeney et al., 2010) because some elements of the method seemingly fit within positivism and others within social constructivism. Some researchers position the Delphi method within a positivist paradigm. This is based on the purpose of pursuing agreement on a single reality, partly through a quantitative, reductionist approach, and the researcher’s perspective as an objective observer (Blackburn, 1999; Monti & Tingen, 1999). However, others contend that the Delphi method is based on social constructivist concerns and assumptions because the method involves constructing a reality through discourse, iterations of group interaction, and negotiation among multiple, individual perspectives, facilitated by the researcher (Hanafin, 2004). I adhere to the latter opinion.
Research method

In this section, I comment on the research design and data collection and analysis methods for each of the three studies. As I have described the research method in detail in the articles, I aim to primarily complement, rather than repeat, those descriptions here.

Article 1: Literature review

I started the work on this thesis by investigating research on process owners within business process management. Initially, this was to increase my understanding of this role and identify the limitations of the extant knowledge base. I found research where process owners were the unit of analysis to be severely limited and the knowledge of process owners to be fragmented, spread over many different sources, and not easily accessible. I concluded that gathering all these fragments of knowledge to form a fuller picture would be valuable for both research and practice. Further, I deemed that establishing a comprehensive and convincing picture would require a rigorous method. Therefore, a systematic literature review seemed appropriate, as this method involves the ‘systematic accumulation, analysis and reflective interpretation of the full body of relevant empirical evidence related to a question’ (Rousseau et al., 2008:475).

The study followed the guidelines for systematic literature reviews developed by researchers such as Kitchenham (2004) and Okoli and Schabram (2010). It is worth mentioning some particular considerations related to the inclusion and exclusion criteria of the review. Initially, my intention was to seek empirical findings on process owners and thus only review empirical research presented on academic forums (e.g., journals and conferences). Thus, I excluded books on BPM from the review because these could offer a knowledge base not necessarily developed through academic, empirical research but also through practice. During a review process, a reviewer however advised that including a selection of books on BPM in the literature review would strengthen the findings. Including books would imply slightly broadening the purpose of the study. Yet I realized that books on BPM constitute an important source of the knowledge base in the field. Therefore, I chose to follow the reviewer’s recommendation, but to stay as close as possible to the original purpose of the review by including a selection of books predominantly authored by academics. A reasonable outcome of broadening the purpose and inclusion criteria seemed to be to also include conceptual academic papers among the sources of the review. The final selection of primary sources for the review comprised 100 academic papers and 10 books on BPM.
**Article 2: Delphi study**

The findings from the literature review emphasized the importance of the role of process owners, but they also revealed a lack of in-depth research on this role, especially regarding the central challenges of the role, and that a limitation of the extant knowledge base is how organizations can make process ownership work. To address the research question concerning how organizations can make process ownership work, I decided to tap into the experience of experts in the field of BPM. I deemed the Delphi method suitable for this study because this method (a) permits exploring the question of ‘high uncertainty and speculation’ (Okoli & Pawlowski, 2004:5); (b) allows for identifying and ranking factors through several iterations (Rowe & Wright, 2001; Schmidt, 1997); (c) seeks the opinions of authoritative experts and pursues consensus among these opinions (Dalkey & Helmer, 1963); and (d) efficiently organizes expert panels without the panel members having to meet face-to-face (Linstone & Turoff, 1975). The study was organized into three phases: brainstorming, reduction, and ranking (Schmidt, 1997). The ranking phase comprised several rounds, where the experts were provided with the results from the previous round and asked to reconsider their ranking in light of those results. As I first asked the experts to suggest factors and explain or justify them (brainstorming phase), and in subsequent phases requested that the experts prioritize and rank the factors, this study can be characterized as a mixed-methods study (Brady, 2015).

I considered that two groups would likely have valuable insight into process-oriented organizations and the work and challenges of process owners: BPM academics and BPM practitioners. As these groups might have different perspectives, I decided to establish two expert panels (Okoli & Pawlowski, 2004). According to a recent study, there is rather low process maturity in many Norwegian organizations, and real and effective process ownership seems rare (Iden, 2012). Furthermore, academic and practitioner literature within the field of BPM (e.g. Vom Brocke & Rosemann, 2010) indicates that stronger expertise in BPM might be found globally and that such expertise is distributed over many countries. Therefore, I sought a wide geographic range of experts. In total, the expert panels included representatives of 23 countries on five continents. The study was conducted online, via email and web forms.

I aimed to reach high consensus on a ranked set of factors that are necessary for making process ownership work. After two ranking rounds, I concluded that reaching high consensus on a ranked set of factors was unrealistic and that the ranking in itself was not as important as I had envisioned at the outset of the study. My considerations on these issues are described in detail.
in the article. I eventually chose to stop the ranking and, based on the reviewers’ recommendation, to omit the ranking results from the article. Consequently, one might argue that the study could have been conducted in only two phases, as the two first phases alone might have sufficed to identify relevant factors and reduce the list of factors to a manageable number. My experience from this study is nevertheless that each of the three phases brought value to the study. The brainstorming phase permitted identifying relevant factors. As I asked the experts to include comments on their suggestions, the brainstorming phase also yielded several statements supporting the factors. The reduction phase permitted reducing the list of factors. However, the reduction phase concluded in 32 factors in total for the two expert panels. A list of 32 factors, with little indication of which of these are the most crucial for making process ownership work, would be of limited value for research and practice. I finally used the individual rankings from the ranking phase to calculate the percentage of experts who had ranked items in the top half of their ranked lists. These percentages allowed me to narrow down the list to 20 factors. The percentage of experts who had ranked an item in the top half of their list indicated the importance of a factor relative to others. Furthermore, there was substantial agreement on the particular importance of 6 out of the 20 factors, which clearly stood out as critical.

**Article 3: Interviews**

“If you want to know how people understand their world and their lives, why not talk with them?” Kvale and Brinkmann (2009:xvii) ask. In this study, the aim was to explore how chief digital officers understand and manage the tensions of digital transformation. I and my coauthors thus deemed qualitative interviews appropriate for this study.

We aimed to include CDOs from both public and private organizations, from a variety of businesses and sectors, and from organizations of differing sizes. We identified potential interview candidates through searches on LinkedIn combined with information from media. We invited 35 CDOs to participate in the study. We sent the invitation by email describing the purpose of the study and providing details on how and in which time period we planned to conduct the interviews. Twenty of the CDOs accepted the invitation. Five of them were working in public organizations (municipalities, directorate, and university) and 15 in private organizations representing industries such as insurance, banking and finance, media, IT, hotels, security, and manufacturing. The size of their organizations (measured by number of employees) varied from less than 100 employees to more than 10,000 employees.
My coauthors and I conducted 20 in-depth, semi-structured interviews with CDOs. We employed a fairly open interview guide, taking a bottom-up approach. We asked informants to tell us about ongoing and planned digitalization projects, their strategy, the challenges that had surfaced so far in the process, and their own role in the organization’s digital transformation process. The interviews were carried out in between May 2016 and April 2017. We conducted some interviews face-to-face, but the majority were by phone due to the wide geographical distribution. Each interview lasted up to one hour. We recorded the interviews with the approval of the informant and transcribed most of the interviews verbatim. For the interviews that were not transcribed, the interviewer developed detailed summaries shortly after the interview.

We conducted structured readings of all transcripts and summaries. Based on an initial coding, using exploratory coding methods (Saldaña, 2015), we developed a data matrix (Miles & Huberman, 1994) of all the data, with one column for each informant and one row for each theme identified during the initial coding. During these first steps of the analysis, the theme of tensions emerged. Subsequently, we searched the data for clear evidence of tensions and of how the CDOs had responded to manage these tensions. We identified several practices in which the CDOs had engaged to manage tensions. We used axial coding to categorize different practices and finally to identify a set of discourses that the CDOs had employed. Throughout the process, we discussed and agreed on the coding and categorization.

Data quality
In this section, I discuss the data quality of the three papers included in this thesis and the measures that I took to ensure satisfactory quality.

Article 1: Literature review
Important presuppositions for data quality in systematic literature reviews are that the review is conducted systematically and rigorously, that the research procedure is explicitly described and is comprehensive in scope, and that the review is reproducible by others (Fink, 2005; Okoli & Schabram, 2010). I began the work on this study by examining literature on the methodology of systematic literature reviews, such as Webster and Watson (2002), Kitchenham (2004), Rousseau et al. (2008), vom Brocke et al. (2009), and Okoli and Schabram (2010). In particular, I followed the recommendations of Kitchenham (2004) and Okoli and Schabram (2010) to conduct a systematic, comprehensive, transparent, and reproducible review.
This article has been through two rounds of revision and resubmission to Business Process Management Journal. A detailed account of the research method has been one of the elements emphasized in the reviews. The final version of the article includes a meticulous description of the research process and how I worked on ensuring data quality.

**Article 2: Delphi study**

The Delphi method has been subject to criticism, first and foremost, related to methodological issues, such as the flexibility of the method, the expert definition criteria, and the meaning of consensus (Hasson & Keeney, 2011). Furthermore, researchers have discussed which factors actually influence experts’ decision to alter their responses during the course of the study (Bardecki, 1984; Rowe & Wright, 1999). Some have also pointed to the risks and consequences of a large attrition rate among expert panel members, as they might feel that continued participation is not worth their time and effort (Landeta, 2006) or that their opinions deviate too much from those of the group (Bardecki, 1984).

To evaluate the trustworthiness of the findings of this study, I applied the four criteria proposed by Lincoln and Guba (1985) for qualitative research: credibility, transferability, dependability, and confirmability. As a Delphi study also contains quantitative elements, I also included some considerations relevant to the validity of the study, as suggested by Hasson and Keeney (2011).

Establishing *credibility* requires employing specific methods or techniques for ensuring that the researcher understands and analyzes the data correctly. Throughout the study, I maintained a detailed record of the research procedure and analysis, including the following:

- Descriptions of the procedure, dates, communication, and so forth;
- A detailed list of all potential expert panel members (evaluation according to criteria for selection, country representation, positive or negative reply);
- Experts’ response rates in each round;
- Experts’ responses in each round and the analysis of these responses; and
- The outcome of each phase (phase 1: a validated list of 75 items; phase 2: reduced lists of 24 items (academic panel)/22 items (practitioner panel); phase 3 (ranked/prioritized lists).

Encouraging the experts to elaborate on each factor that they had suggested in the brainstorming phase facilitated both my work on consolidating and categorizing items at the end of this phase and my interpretation of the results of the study. In addition, respondents voluntarily provided
comments on items, the analysis, and the research procedure throughout the process. The consolidated output from the brainstorming phase was sent to the experts for validation. This step is an important means of ensuring that the researcher has understood and analyzed the data correctly, and it functions as a form of member check. On completing the data collection, I provided the experts with a report of the study and the findings.

Important elements of ensuring the validity of the study were the quality of the expert panels and the experts’ continued participation in the study. I established specific criteria for the selection of potential expert panel members. The criteria for inclusion in the academic panel were the completion of a relevant Ph.D., holding a formal position with an academic institution, and having academic publications in the field of BPM. For the practitioner panel I required a minimum of five years’ experience with BPM, as a process owner, as a BPM consultant, or in another BPM-related position. Content validity was increased by including diversified experts who had knowledge of, and interest in, the topic. I worked toward securing the continued participation of experts and a high response rate. Experts were initially given about one week to respond per round. After the deadline, I sent reminders to those who had not responded. I endeavored to establish and maintain a positive rapport with the experts through personalized greetings and a courteous tone in all emails and by showing respect for their time and appreciation for their effort.

Consolidating items after the first round of a study entails a possibility that the researcher might subjectively influence the list of items, and this poses a threat to the study’s confirmability. I sought to counteract potential biases influencing this work by asking a fellow researcher to work with me on consolidating the items. We worked independently and then met and compared lists before agreeing on the final list. In addition, as mentioned above, I subsequently sent the consolidated list to the experts for validation. Confirmability was also ensured through the detailed recording of responses and response rates.

Transferability regards the application of findings to other settings. This study did not rely on data from a specific setting but on data based on the knowledge and insights of a wide range of experts acquired through experience in multiple organizations, industries, and countries. Dependability and reliability require reporting the process in detail, and I carried this out by keeping a detailed research record. However, one might consider the likelihood of repeating a specific Delphi study. According to Hasson and Keeney (2011:1701), researchers must
acknowledge that Delphi studies provide a ‘a snapshot of expert opinion, for that group, at a particular time, which can be used to inform thinking, practice or theory’.

**Article 3: Interviews**

To evaluate the trustworthiness of the findings of this study, I again applied the criteria proposed by Lincoln and Guba (1985).

The *credibility* of findings depends on their congruence with reality. The reality in this case was the world as perceived by the CDOs. We sought to form an accurate picture of this reality by means of pursuing an established research method, applied with rigor. We encouraged honesty and openness in the interviews by starting each interview with a brief introduction to the research project and researchers. We assured the informants that all persons and organizations would be anonymized whenever and wherever results would be used and that we would not include quoted material in a way that might identify the CDO or the organization. Furthermore, an important part of assuring that findings are congruent with the reality as perceived by informants rather than by the researcher(s) involves reducing researcher bias. Random sampling offers the potential to reduce the risk of researcher bias. In the case of CDOs in Norwegian organizations, the population was limited. In fact, almost all the CDOs we found during our searches for potential informants were invited to participate in the study. However, the risk of biased selection was reduced by the fact that, beforehand, I had limited knowledge of the CDOs identified as potential informants and their role in the digital transformation of their organization.

An interview is a ‘socially and linguistically complicated situation’ (Ashcraft & Alvesson, 2012:245). Therefore, I believe that it is not possible to remove bias entirely from an interview situation. Taking a reflexivist stance (Ashcraft & Alvesson, 2012), however, I sought a high degree of awareness of the potential influence that I as a researcher might exert during the research process, in particular regarding the formulation of interview questions, and how I responded to the informants’ answers to my questions. During the analysis phase, I and two other researchers, each with different backgrounds and perspectives, discussed the findings and interpretations. Finally, we performed a member check by making our results available to the informants and asking them to comment on them.
The question of *transferability* regards the applicability of findings to other contexts or situations (Merriam, 1998). For readers to evaluate whether the findings might be applicable to their situation, we made abundant use of quotations supporting our analysis. We also provided information regarding the organizations represented in the study (sector, size, etc.)

*Dependability* refers to whether reproducing the study using the same method and informants would yield the same results (Shenton, 2004). In a qualitative study, which depends on time and context, one cannot expect the study to be repeated and yield the same results. To enable a similar study, I thoroughly reported the research method employed and documented the research process through a research journal cataloging the process and the verbatim transcriptions of (most) interviews. Together with the numerous quotations provided in the article, this detailed recording of the research process added to the transparency of the study and thus to the *confirmability* of the results.

**PRESENTATION OF ARTICLES**

Below, I present the three articles that constitute this thesis: one literature review and two empirical articles.

**Article 1: Process owners in business process management: A systematic literature review**

The purpose of Article 1 is to increase our understanding of the role of process owners through a systematic literature review of 100 articles and 10 books that shed light on process ownership. The systematic review supports my initial assumption that extant research focusing directly on process ownership is, indeed, scarce, but demonstrates that BPM literature still encompasses a broad knowledge base on process owners scattered across various sources. The review results in a comprehensive picture of process owners’ role and responsibilities, and also establishes the main purpose of the role as accomplishing process control and process change. As researchers have noted that stability and change constitute a duality (Farjoun, 2010; Leana & Barry, 2000), and that change is an integral part of ongoing operations (Carter, et al., 2013), process control and process change also form two sides of the same coin. Documenting and monitoring processes enable an evaluation of which changes are necessary, while change lays the foundation for stable, effective, and efficient processes.
The findings show that process owners have an important role to play in incremental process improvement and process innovation, from detecting a need for change and initiating a change process, to implementing the changes. Furthermore, findings from the review identify how a lack of collaboration between different units and tensions between process owners and functional units create serious impediments to effective process ownership and, thus, to well-functioning processes and necessary process change. Finally, I present findings on sources of authority and influence for process owners, which are important enablers for process owners as to exerting intergroup leadership.

**Article 2: Making process ownership work: Evidence from a global Delphi study**

Article 2 aims to develop an understanding of how organizations can make process ownership work. I conduct a global Delphi study with two expert panels consisting of academics and practitioners from 23 countries. The first phase of the Delphi study (brainstorming) generates an extensive list of 75 success factors, as well as a number of statements supporting these factors. The second and third phases (reduction and ranking) narrow the list to a set of 20 factors required for process owners to succeed, emphasizing the particular importance of six of these.

The findings indicate that the most critical success factors are instrumental in managing the tensions between process owners and functional units, thereby facilitating the process owner’s role in process change and control. Based on the findings, I develop a framework of necessary capabilities for effective process ownership, situating the findings within the six core elements of BPM (Rosemann & vom Brocke, 2010).

**Article 3: How chief digital officers manage the tensions of digital transformation**

In Article 3, my co-authors and I focus on organizational challenges related to digital transformation, as well as the role of chief digital officers. We posit that digital transformation both amplifies existing and possibly latent intraorganizational tensions, and also creates new ones. We suggest that chief digital officers’ foremost contribution to digital transformation entails identifying and managing tensions. Drawing on organizational tension and sensemaking theory, we explore how CDOs understand and manage organizational tensions. We identify five types of tensions. The first two relate directly to digital transformation: a tension between the organization’s existing vs. requisite competence, capabilities, and work practices and a tension between individual interests and the collective good, as digital transformation threatens individuals’ job security. The remaining three can be characterized as intergroup tensions: tension between organizational units and the organization as a whole,
tension between business units and the IT department, and tension between the CDO and existing structures. We find that CDOs primarily seek to manage these tensions by establishing dominant discourses, and identify the key role of the CDO as a *sensegiver*.

**DISCUSSION**

**Theoretical contributions**

This thesis makes several theoretical contributions. A literature review and two empirical studies illuminate the contribution process owners and chief digital officers make to organizational change. The findings also enable some comparisons between the two roles and result in conclusions on intergroup leadership in the context of organizational change.

Previous research has pointed to a lack of research focusing directly on the role of process owners. The systematic literature review in Article 1 supports my initial assumption that research focusing directly on process ownership is indeed scarce; however, it also demonstrates that literature on business process management still encompasses a broad knowledge base on process owners scattered across various sources. My review gathers these sources to form a broad and comprehensive picture of process ownership that future research can build upon.

The literature review also illuminates that effective process ownership is important for process change, but that academic research has not sufficiently established how organizations can make process ownership work. Article 2 addresses this research gap by producing a list of twenty factors for effective process ownership, of which six are found to be highly important. Comments by the experts in this study combined with individual findings from prior research demonstrate why these factors are the most important. Together, these two studies contribute to a fuller and more in-depth understanding of (a) the role of process owners in organizational change, (b) the challenges they face, in particular regarding intraorganizational tensions and (c) how organizations can seek to manage these tensions.

Article 3 contributes to a deeper understanding of the tensions related to digital transformation and how chief digital officers seek to manage them. Whereas prior studies have documented and analyzed the different roles of CDOs in digital transformation, our study extends these insights by focusing on the discursive role of the CDO and identifying the CDO as a sensegiver. We identify several discourses CDOs employ to give meaning to the purpose and content of the
transformation, as well as to create the sense that organizational units are important and interrelated parts of a whole.

The studies in this thesis demonstrate that although business process change and digital transformation presume extensive collaboration between different organizational groups, productive collaboration is not a given, and significant tensions may arise and obstruct the required changes. A fundamental reason why organizations appoint process owners and chief digital officers is that existing organizational structures are inadequate for supporting collaboration between different units and lack the universal perspective that business process change and digital transformation require. The findings from the three papers show a large degree of similarity between the intraorganizational tensions relevant to business process change and those relevant to digital transformation. Both business process change and digital transformation are hindered by tensions and a lack of collaboration between different organizational units. Significant tension also arises between the organization as a whole and individual units, which often take a local perspective and pursue local objectives. Furthermore, though organizations seek to address these issues by putting in place process owners and chief digital officers as intergroup leaders (Pittinsky & Simon, 2007), introducing these roles in the organization can cause significant tensions between these new structures and existing ones, which process owners and chief digital officers then need to manage.

The overall purpose of this thesis was to investigate how intergroup leaders like process owners and chief digital officers contribute to managing intergroup tensions hindering organizational change. Intergroup leadership has been called ‘one of the bigger challenges of leadership in organizations’, yet research has only explored intergroup leadership to a limited extent (Hogg, et al., 2012:232). This thesis contributes to a deeper understanding of the challenges related to intergroup leadership in the context of business process change and digital transformation. In the following discussion, I demonstrate how my findings address the overall research question. To do this, I draw upon social identity theory and theory on intergroup leadership.

Researchers have suggested that in order to manage intergroup tensions, intergroup leaders should work to build an intergroup relational identity that encompasses different groups (Hogg, et al., 2012). However, few empirical studies have investigated how intergroup leaders actually endeavor to build an intergroup relational identity, how such an identity might facilitate organizational change, and what challenges intergroup leaders face in this process.
Hogg et al. (2012) recommend that in order to build an intergroup relational identity, intergroup leaders should give meaning to a common objective of value to both/all groups and demonstrate how different groups play complementary parts in reaching this objective. The findings from this thesis show that giving meaning to changes and to the contribution of different groups and domains are central to the roles of process owners and chief digital officers. Yet, the findings show that intergroup leaders may face significant challenges related to building an intergroup relational identity across different units and domains through a shared overall objective. A central challenge is that the overall objective might not be sufficiently valued by different organizational units. In business process management, this overall objective is well-functioning business processes, while chief digital officers aim to accomplish a successful digital transformation. Process awareness is low in many organizations. Likewise, organizational units frequently have a limited understanding of what digital transformation is and why it is required.

An important contribution of this thesis lies in showing how process owners and chief digital officers can strengthen the perceived value of the overall objectives of well-functioning business processes and successful digital transformation respectively, and thus facilitate the construction of an intergroup relational identity. Findings from the two articles on process ownership show that process awareness can be increased through the purposeful use of process models and process metrics – the “language” of process management – and by building an organizational culture where values like customer centricity and a strong focus on excellence, improvement and collaboration are prominent. The study on chief digital officers provides a detailed analysis and discussion of how individuals in this role seek to give meaning to digital transformation and address the necessary collaboration between units and domains through different discursive practices. Moreover, as the ‘negative war discourse’ employed by chief digital officers may create an image of an organization under threat, it may also contribute to strengthening employees’ identification with the organization, as suggested by Ashforth and Johnson (2001).

The two studies on process ownership show that the relationship between the process and the functional organization suffers from low process awareness and from the process organization’s limited standing in the organization. Though a business process per definition represents a cross-cutting identity, identification with it is often low, as employees identify to a greater extent with the functional unit they belong to. Findings show that the salience of the process identity might be strengthened by increased process awareness, as well as by top management support and a mandate signaling the importance of process ownership and process thinking in
the organization. As long as identification with the process identity remains weak, process owners will be perceived as representatives of an outgroup, and thus subject to biases hampering their ability to drive change. The same pertains to chief digital officers – typically a new role that the organization struggles to make sense of and which aims to “bridge” groups (Tumbas et al., 2018) rather than be part of any of them. My findings demonstrate that process owners and chief digital officers therefore must work to overcome biases and build trust through transparency and dialogue. Finally, the findings support the importance of facilitating positive contact between groups (Dovidio, et al., 2011; Dovidio, et al., 2017) in common meeting places where representatives of different groups can be heard.

To sum up, my findings provide a deeper understanding of the role of process owners and chief digital officers as intergroup leaders seeking to facilitate organizational change through connecting different groups involved. This thesis thus contributes to literature on business process management and on digital transformation, but also to our understanding of intergroup leadership in the context of organizational change.

Implications for practice
The findings of this thesis have significant practical implications. Organizational leaders often have an inadequate understanding of the tensions in the organization (Seo, et al., 2004). This thesis could deepen organizational leaders’ understanding of intraorganizational tensions related to process change and digital transformation, and how they can be productively managed. Furthermore, process owners and chief digital officers who seek to manage organizational tensions effectively need to be conscious of and able to reflect on the existence, character and strength of these tensions, and evaluate possible strategies for managing them. The findings of this thesis thus also have the potential to improve relationships within the organization and increase collaboration, and thereby intergroup performance.

The findings demonstrate the importance of the roles of process owners and chief digital officers as intergroup leaders that manage intraorganizational tensions, but they also show that new tensions arise from the establishment of these positions. Extent research indicates that although executives appoint process owners and chief digital officers, the steps they take to make these roles contribute to organizational change and performance are often limited (Iden, 2012). Executives need to be aware of potential tensions establishing these roles might...
engender, and of the effort needed to make these roles work in their organization, not least from the executives themselves.

Finally, I believe my findings will be of value for education. Literature on business process management is abundant, but commonly emphasizes technical issues rather than managerial and organizational concerns. Literature on digital transformation and chief digital officers in particular is limited. My studies provide insight and examples that can expand the knowledge base of students of business process management and digital transformation.

**Limitations and opportunities for further research**

The empirical findings in this thesis are based on interviews with chief digital officers and a Delphi study where many of the experts were either academics within the field of BPM, process owners, BPM consultants or in other BPM related positions. The highly relevant and extensive insight and experiences of the informants and experts must be seen as a strength of the study. Yet, exploring the role of intergroup leadership in digital transformation and process change mainly through the perspectives of chief digital officers and ‘representatives of the process’ excludes other perspectives. This can be seen as a limitation that should be addressed in future research. Furthermore, a future study with research methods that include direct observation of organizational interactions might provide an even deeper understanding of the discourse and practices used to manage the tensions of process change and digital transformation.

The studies in this thesis provide an in-depth understanding of the role process owners and chief digital officers play in managing the tensions of organizational change, but the findings do not identify potential differences related to different stages in change processes. The character and strength of various intraorganizational tensions might change over time. Future studies should therefore investigate the impact and challenges of intergroup leadership at different stages of change.

Both extent research and my findings show that process owners and chief digital officers might have a dual position in the organization. For example, a process owner might also head a functional unit, and a chief digital officer might simultaneously function as chief information officer. Literature on process management has pointed to challenges for process owners who also lead a functional unit, and thus are part of the “ingroup” of this unit – but not of other units involved in the process (Iden, 2012; Jeston & Nelis, 2011). My research did not try to discern
significant differences between process owners and chief digital officers who only hold these responsibilities and those who have a dual position. More research on the potential advantages and disadvantages of different options is required.

In this thesis, I have focused on two intergroup leadership roles established with the purpose of accomplishing organizational change. Other organizational roles, such as project managers, might have similar functions, but these roles have not been investigated in the studies included in this thesis. Including other roles might provide additional insight into intergroup leadership roles in organizational change and would thus provide an interesting avenue for further research.
REFERENCES


ARTICLES

ARTICLE 1

ARTICLE 2

ARTICLE 3
Danilova, K.B., Bygstad, B. & Iden, J. How chief digital officers manage the tensions of digital transformation
PROCESS OWNERS IN BUSINESS PROCESS MANAGEMENT: A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

This paper aims to determine the state-of-the-art in research on process owners, a key role within business process management and process governance, and thus to increase our understanding of the role of process owners. The author conducts a systematic literature review of research shedding light on the role of process owners. The review includes 100 academic papers and 10 books on BPM. Findings from the review demonstrate the significance of appointing process owners and showcase process owners’ role and responsibilities, as well as obstacles to and enablers of effective process ownership. Based on the findings from the review, the author proposes a comprehensive framework on process ownership. The review provides a knowledge base for future research to build upon and can serve as a guide for practitioners. The review also identifies several research gaps and opportunities for future research.

Keywords
BPM, business process management, process owner, process change, process control, literature review
1. INTRODUCTION

Business process success requires effective governance of end-to-end processes (De Bruin & Rosemann, 2005; Hernaas et al., 2016; Markus & Jacobson, 2010; Spanyi, 2010). The purpose of process governance is to improve process performance, by establishing accountability through structures, metrics, roles, and responsibilities (Spanyi, 2010). A central element of process governance involves appointing process owners responsible and accountable for the process (Doebeli et al., 2011; Spanyi, 2010). Other elements include process analysts and process architects supporting the process owners (Doebeli, et al., 2011), a Chief Process Officer who coordinates and works closely with process owners (Scheer & Brabänder, 2010; Van Looy, 2015), and a Center of Excellence supporting process thinking and process management throughout the organization (Rosemann, 2010).

Established process ownership is a means of institutionalizing business process management (BPM) in the organization (Van Looy, 2015; vom Brocke, et al., 2014). Process owners represent an organizational commitment to BPM, as ‘the most visible difference between a process enterprise and a traditional organization’ (Hammer & Stanton, 1999:111) and an indicator of senior managers’ perception of BPM as a basis for business change (Žabjek, et al., 2009). Researchers describe process owners as a key role in process-oriented organizations (Armistead, et al., 1999; Hammer, 2007; Iden, 2012; Smart, et al., 2009), and a critical success factor for BPM (Spanyi, 2010; Trkman, 2010). Empirical studies have demonstrated the importance of well-functioning process owners to process management and process change (Balaji et al., 2011; Hernaus, et al., 2016; Kohlbacher & Gruenwald, 2011b; Ongaro, 2004).

Although human, organizational and political aspects of BPM are often more challenging than the technical aspects, research focusing on BPM governance (Doebeli, et al., 2011) and on the role of process owners in particular (Reijers & Peeters, 2010) is scarce. Advancing research on these aspects of BPM requires insight into the extant knowledge base. In this paper, I investigate the state-of-the-art in research on the role of process owners within BPM, as I seek to answer the following research question:

*RQ.* How has research to date contributed to our understanding of the role of process owners in organizations practicing business process management?

This study responds to a call for a larger focus on managerial and organizational aspects of BPM (Kohlborn et al., 2014; Mendling, 2016; Recker, 2014; Roeser & Kern, 2015). The
study’s main contribution is to increase our understanding of the role of process owners. I expect the findings to be relevant for academics and practitioners. The paper provides an overview of the accumulated knowledge base on process ownership, which future research can build upon and which can facilitate researchers’ search for relevant studies. Based on the findings from the review, I develop a comprehensive framework, which can also serve as a guide for practitioners.

The remainder of this paper is organized as follows. I start by providing the background for this study, before describing the research methodology I employ. I then present the findings of the literature review, propose an overall framework based on these findings, and discuss recommendations and practical implications. Further, I discuss in which areas research on process owners has been insufficient, and suggest opportunities for future research. In the final section, I draw conclusions and reflect on the study’s contributions and validity.

2. BACKGROUND

2.1. Business process management
A fundamental concern in business process management is optimization of customer value through the management of end-to-end business processes and performance (Hammer, 2010; Smart, et al., 2009). Key dimensions of BPM are process control and incremental and radical process change (Ng, et al., 2015). Business process management should be a continuous practice in the organization (Smart, et al., 2009; vom Brocke, et al., 2014), adapted to different business contexts (vom Brocke, et al., 2016). Several frameworks for BPM have been developed (e.g. De Bruin & Rosemann, 2005; Hammer, 2007; Iden, 2012; Kohlbacher & Gruenwald, 2011a; Smart, et al., 2009; Trkman, 2010) that describe what BPM entails and requires. For instance, De Bruin and Rosemann (2005) describe six core elements which constitute BPM as a holistic management discipline (Rosemann & vom Brocke, 2010): strategic alignment, governance, methods, information technology, people, and culture.

Business process management builds upon the fields of total quality management, encouraging incremental and continuous process change, and business process reengineering (BPR), promoting radical, transformational change (Hammer, 2010). As the popularity of BPR waned, BPM was perceived as chiefly involving incremental, continuous change (Benner & Tushman, 2002), thus presenting a seemingly more sensible and realizable alternative to the more challenging reengineering. BPM has been criticized (Benner & Tushman, 2002) for placing too
much emphasis on *exploitation*, activities related to ‘refinement, choice, production, efficiency, selection, implementation, execution’ at the expense of *exploration*, ‘search, variation, risk taking, experimentation, play, flexibility, discovery, innovation’ (March, 1991:71). The view of BPM that has evolved in recent years however suggests that process management encompasses both incremental and radical change (Hung, 2006; Ng, et al., 2015; Niehaves, et al., 2013; Škerlavaj, et al., 2007; vom Brocke & Schmiedel, 2015), and thus permits the balance between exploitation and exploration activities necessary for continued process and organizational success (Elzinga et al., 1995; March, 1991).

**2.2 Process governance**

Governance mechanisms are particularly important for end-to-end processes crossing functional units, as typically neither the process nor the functional unit have the formal hierarchical authority over the other (Markus & Jacobson, 2010). Process governance involves combining impersonal governance mechanisms, like regulations, standards or contracts, with personal governance mechanisms, like organizational roles or units (Markus & Jacobson, 2010). Personal governance can be practiced informally, or be formally assigned. Markus and Jacobson describe three possible levels of formal lateral governance of business processes:

- Assigning coordination responsibility to a *liaison role* or a *standing committee* with no or limited authority;
- Establishing a *process coordination unit* led by a process owner – ‘a separate organizational unit charged with responsibility to coordinate a business process, while the activities that make up the process continue to be executed in operating business units’ (Markus & Jacobson, 2010:207); and
- Restructuring the organization around processes as the central units.

The latter alternative entails significant organizational and financial consequences for the organization, and its benefits are often not found to outweigh its costs. As a result, organizations commonly adopt the structure of a matrix with process units in addition to functional divisions (Hellström & Eriksson, 2008; Küng & Hagen, 2007; Vanhaverbeke & Torremans, 1999; Willaert et al., 2007). Within this matrix, overall responsibility for the processes is assigned to process owners (Hammer, 2007; Hammer & Stanton, 1999), who should be accountable for process efficiency and effectiveness (Vanhaverbeke & Torremans, 1999:43). The introduction of the process owner role has important consequences for the governance structure of the organization (Hammer, 2010).
2.3 The process owner concept

The first descriptions of process owners as a concept can be found in the seminal text-books on process improvement and business process reengineering, such as Harrington (1991), Rummler and Brache (1990) and Hammer and Champy (1993). Twenty-five years later, research has yet to conclude on a definition of the term process owner. Definitions typically emphasize end-to-end, cross-functional responsibility for the process (DeToro & McCabe, 1997; Hammer, 1996; Harrington, 1991; Hernaus, et al., 2016; Kohlbacher, 2010). Further, several definitions describe the process owner as accountable for process performance and results (Dumas et al., 2013; Hammer, 2007; Harrington, 1991; Hernaus, et al., 2016; Scheer & Brabänder, 2010; Žabjek, et al., 2009), as well as for process improvement (DeToro & McCabe, 1997; Scheer & Brabänder, 2010), in order to ensure and maintain process efficiency and effectiveness (DeToro & McCabe, 1997; Harrington, 1991; Vanhaverbeke & Torremans, 1999). Based on these definitions, and for the purpose of this study, I propose the following synthesized definition: ‘A manager with end-to-end responsibility for a process and its performance, results, incremental improvement and innovation’.

Other terms, such as process manager, process steward and process leader are also sometimes employed as synonyms to process owner (Hernaus, et al., 2016). Though this study also reviews sources using such synonyms, I will consistently refer to the role as process owner throughout this paper, as this seems to be the most common term.

3. RESEARCH METHODOLOGY

The research method was a systematic literature review, which involves the ‘systematic accumulation, analysis and reflective interpretation of the full body of relevant empirical evidence related to a question’ (Rousseau, et al., 2008:475). A systematic literature review must be conducted and documented with rigor (Vom Brocke, et al., 2009). In order to conduct an explicit, comprehensive and reproducible review (Fink, 2005; Okoli & Schabram, 2010), I followed an approach in accordance with the recommendations of Kitchenham (2004) and Okoli and Schabram (2010), consisting of planning the review, searching for literature, screening the studies identified and selecting the relevant studies, performing a quality appraisal of studies, extracting the data and synthesizing the data.
3.1 Planning the literature review
I started the review process by defining the research question to be explored and developing a review protocol that detailed the planned search strategy and the inclusion and exclusion criteria.

3.2 Literature search
I started the search process by identifying the relevant search terms. Process owner is the term most commonly employed in BPM literature and practice. The terms process manager (Baumöl, 2010; Hammer, 1996; Harrington, 1991; Hernaus, et al., 2016), process steward (Burlton, 2010; Hernaus, et al., 2016; Jeston & Nelis, 2011; Spanyi, 2010), process leader (Hammer, 1996; Harrington, 1991) and process responsible (Becker et al., 2013) are also mentioned as synonyms. In the searches for relevant literature, I employed these terms as keywords in full-text searches, combined with “process management” OR BPM OR BPR OR “business process reengineering” in the title or abstract of papers.

I searched for academic papers in the scientific databases Emerald, EBSCO Business Source Complete, ScienceDirect and Taylor & Francis, which I expected to cover the majority of relevant publications. I limited the searches to academic journals. Only papers written in English were included. The search was conducted until August 2017.

I started the searches in each database with the search term ("process owner" OR "process ownership"). In subsequent searches for the other keywords, I retained papers only that had not already been identified in previous searches. For instance, Hernaus et al. (2016) employ the term process owner, but mention process manager, process steward and process leader as synonyms, and therefore, their work appears in the searches for all these keywords. Table I provides an overview of the number of searches and results. The results column displays the total number of results in the initial searches. In the ‘retained’ (the number of papers retained for further analysis) and ‘included’ (the number of papers included in the final review) columns, I removed duplicates as described above, so each article is counted only once. For a complete overview of searches including search terms, see Appendix A.

Given that the majority of conference papers from the largest BPM conference focus on technical aspects of BPM (vom Brocke & Sinnl, 2011) and have a limited focus on BPM governance and process ownership (Mendling & Recker, 2016), I chose not to perform a
systematic search for conference papers. However, I expected relevant conference papers to turn up during backward and forward tracing of references. I performed backward searches of all the papers retained from the initial searches. I performed forward searches of papers that focus on process owners or BPM governance.

<table>
<thead>
<tr>
<th>Source</th>
<th>Results</th>
<th>Retained</th>
<th>Included</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emerald</td>
<td>295</td>
<td>70</td>
<td>52</td>
</tr>
<tr>
<td>EBSCO</td>
<td>77</td>
<td>32</td>
<td>21</td>
</tr>
<tr>
<td>Science Direct</td>
<td>459</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>Taylor &amp; Francis</td>
<td>55</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Backward and forward ref.</td>
<td>17</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td><strong>Sum</strong></td>
<td><strong>147</strong></td>
<td><strong>100</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Table I. Literature search; sources and number of results*

### 3.3 Screening, selection and quality appraisal

The selection process started with a practical screen (Okoli & Schabram, 2010), in which I assessed the papers found in the searches based on the title, the abstract and if necessary, a full-text search of the word “owner” and subsequent evaluation of the relevance of each instance of the term in the text. I retained papers that seemed relevant to the research question based on the initial evaluation and downloaded them for further analysis.

The main inclusion criterion was that the paper should shed light on the process owner role. I thus excluded papers that merely mention the keywords in reference to extant research. Based on the view of BPM as encompassing BPR and TQM (Hammer, 2010), I included relevant papers from these fields. I excluded papers on Lean and Six Sigma as I considered these concepts outside the scope of the research question. I studied literature reviews for relevant references but did not include them in the review. Otherwise, my intention was to be as inclusive as possible, to avoid eliminating potentially valuable contributions.

Many papers turned out to be of no relevance to the research question but appeared in the search because the keyword figures in the article, for instance in the context of whom the researchers had interviewed (e.g. Anastassiu et al., 2016; Pádua et al., 2014). Some papers mentioning the
keyword *process ownership* refer not to the role of process owners but to the more general feeling of ownership of the process among the organization’s employees (e.g. Aghdasi et al., 2010; Al-Hudhaif, 2009). The keyword *process manager* yielded several hits related not to a person accountable for a process, but to a process management system (e.g. Shaw et al., 2007; Turner et al., 2012). The keyword *process responsible* mainly yielded results where process did not signify business process, but for example a change process, or where the database had identified a composition of the words *process* and *responsible* which in fact refers to “the process, which is responsible…” (e.g. Benyoucef et al., 2011).

In sum, I retained 147 journal articles from the database searches for a more thorough analysis, in which I read the whole article and evaluated its content based on the inclusion and exclusion criteria. I deemed 89 articles relevant for the research objective. As a measure of the quality of the papers, I used inclusion of the journal in the Association of Business School’s Academic Journal Guide 2015. Six of the retained journal articles were published in journals not listed in the ABS guide and thus I excluded them from the review. The final selection of papers from the database searches totaled 83 papers. Additional searches (backward, forward and literature reviews) yielded an additional 12 journal articles and five conference papers.

As books on BPM constitute an important source of the knowledge base in the field, I chose to include a selection of 10 books on BPM in addition to the academic articles. I identified a representative sampling of relevant books through reference lists of academic articles. I made the final selection based on the book’s contribution to and relevance in the field, as indicated by the number of citations in Google Scholar. I also aimed for a selection of books predominantly authored by academics, and for a selection representing a wide timespan (1991-2017). The following books were included: Rummler and Brache (1990), Harrington (1991), Davenport (1993), Hammer (1996), vom Brocke and Rosemann *eds.* (2010), Jeston and Nelis (2011), Becker et. al. *eds.* (2013), Dumas et al. (2013), Harmon (2014), vom Brocke and Schmiedel *eds.* (2015).

**3.4 Data extraction and synthesis**

Throughout the data collection, I kept a research protocol detailing the searches and findings. From each primary source, I extracted the following data:

1. title of the publication (journal or conference proceedings);
2. full reference;
As I recorded the findings, I coded the data by following a concept-centric approach (Webster & Watson, 2002). Following this first round of coding, I categorized the data based on axial coding (Saldaña, 2015), concluding on four main categories: *the significance of the role of process owner* (section 4.2), *process owners’ role and responsibilities* (section 4.3), *obstacles to effective process ownership* (section 4.4) and *authority in process ownership* (section 4.5). For the three last categories, I performed a further categorization into sub-categories. I derived the main categories and to a certain extent the sub-categories by using an inductive approach to the data (Bandara et al., 2015), whereas the classification of some of the sub-categories followed a deductive approach. For instance, the classification of process owner responsibilities leans partly on my working definition of the role (cf. section 2.3). As to authority in process ownership, I applied the three sources of authority described by Harrington (1991) as a scheme for coding and classification.

4. LITERATURE REVIEW ON PROCESS OWNERS

4.1. Research on process ownership – a quantitative overview

I reviewed 100 papers published between 1994 and 2017 in 44 academic journals and four conference proceedings. The majority of the journals are in the fields of information management or operations research and management science. One-fourth of the papers in the review were published in *Business Process Management Journal*, the major outlet for research within BPM.

The number of 100 papers does not provide an accurate picture of the extent of the research on process ownership. Many of the papers reviewed are case studies that mention the role of process owners, but the organization or a change process constitutes the unit of analysis (e.g. Harkness et al., 1996; Manfreda et al., 2014). More than 30 papers were included in the review based on a brief reference to process owners’ responsibilities in the organization, sometimes in only one or two sentences (e.g. Massey et al., 2002; Najmi et al., 2005). Other studies include
process owners as part of a larger framework of what constitutes BPM or process orientation (e.g. Kohlbacher & Gruenwald, 2011a; Smart, et al., 2009). Of the 100 papers included in the review, only eight have a title that includes the term ‘process owner’ (or its synonyms) and focus mainly on process owners: Siemieniuch and Sinclair (2002), Larsen and Klischewski (2004), Reijers and Peeters (2010), Moses (2011), Nesheim (2011), Kohlbacher and Gruenwald (2011b), Weitlaner et al. (2012), Nilsson and Sandoff (2015). Two of these studies used surveys to examine the effect of process ownership on organizational performance (Kohlbacher & Gruenwald, 2011b; D. Weitlaner, et al., 2012). One study focuses on the responsibilities of process owners in different organizations (Reijers & Peeters, 2010). Five are case studies investigating the role and challenges of process owners, in matrix-like organizations (Nesheim, 2011), in health organizations (Nilsson & Sandoff, 2015), in interorganizational contexts (Larsen & Klischewski, 2004), from a governance perspective (Moses, 2011) and from an ergonomics perspective (Siemieniuch & Sinclair, 2002). The last and most recent study proposes a representation scheme for process owner information in business process models (Leite et al., 2016).

The findings show that the term process owner is predominantly used in BPM research and literature. Process owner is the key term in 95 of the 100 papers, while process manager is the key term in five of the papers: Steketee (2010), Eriksson and Ujvari (2015), Nilsson and Sandoff (2015), vom Brocke et al. (2016), and Ohlsson et al. (2017). Process leader, process steward and process responsible do not appear as key terms in any of the 100 papers. Process owner is likewise the preferred term in the books included in the study, with the exception of vom Brocke and Rosemann eds. (2010), where the authors of some of the chapters refer to process managers (Baumöl, 2010; Bucher & Winter, 2010; Seidel et al., 2010), process stewards (Burlton, 2010) or process leaders (De Bruin & Doebeli, 2010). Some also indicate that the terms process manager (Burlton, 2010; Iden, 2012) and process responsible (Becker, et al., 2013; Novotny & Rohmann, 2010) apply to sub-process owners in a process hierarchy.

4.2 The significance of the role of the process owner

According to the studies reviewed, a large percentage of process-oriented organizations appoint process owners. In a survey of 185 organizations in Austria, Germany and Switzerland, Neubauer (2009) finds that 82% of the organizations assigned process owners. In a recent survey of 840 Austrian companies, Weitlaner and Kohlbacher (2015) find that larger firms (>250 employees) were more likely to appoint process owners than smaller ones, and
manufacturing firms were more likely to appoint process owners than were service providers. The latter finding is also supported by a study by Goeke and Antonucci (2013). Weitlaner and Kohlbacher suggest that this finding can be ascribed to the lower use of process performance measures in the service industry—when such measurement is not in place, there is little point in investing in process owners. In addition, the frequency of established process ownership naturally increases with the organizations’ BPM maturity (Pritchard & Armistead, 1999).

Literature on business process management describes several frameworks that include process owners as a central dimension of BPM (Iden, 2012; Iden & Eikebrokk, 2014a; Smart, et al., 2009) and process orientation (Chen et al., 2009; Kohlbacher & Gruenwald, 2011a). Process ownership has also been established as a critical success factor for BPM (Trkman, 2010) and for the implementation of enterprise resource planning (ERP) systems (Žabjek, et al., 2009). Iden and Eikebrokk (2014b), however, find no significant relationship between the implementation status of an information technology infrastructure library (ITIL) and the level of established process ownership. Žabjek et al. (2009) validate the definition of process owners as an indicator of senior management’s perception of BPM as a basis for business change.

Kohlbacher and Gruenwald (2011a) propose that process orientation is a multidimensional construct, with process ownership one of seven key dimensions. Building upon this study, Kohlbacher and Reijers (2013) test how these dimensions influence organizational performance related to financial performance, product quality, customer satisfaction, delivery speed, time-to-market speed and delivery reliability. Kohlbacher and Reijers find no evidence that process owners with end-to-end authority have a direct impact on organizational performance but remark that process ownership can still have an indirect effect, as a dimension which is ‘necessary, but not sufficient to achieve higher organizational performance’ (Kohlbacher and Reijers, 2013: 256). This finding is consistent with Kohlbacher and Gruenwald’s (2011b) conclusion that process ownership and process performance measurement must be combined in order to have a significant impact on financial performance. It is also consistent with Weitlaner et al.’s (2012) findings that the combination of process ownership and continuous process improvement methods leads to higher financial performance and customer satisfaction. In addition, in a study of the relationship between supply chain management practices and supply chain performance, Lockamy and McCormack (2004) find that establishing process ownership has an indirect positive effect on supply chain performance, as process owners play an important role in ensuring the effectiveness of the processes. Markus and Jacobson
point to a case where a governance structure with process owners collaborating with functional managers led to increased effectiveness and accountability. In a lab experiment on medication administration, Tucker (2015) concludes that high-level access to process owners increases the probability of hospital nurses reporting operational failures and using policy-compliant workarounds in difficult conditions.

Several case studies point to the importance of established process ownership (Armistead, et al., 1999; Balaji, et al., 2011; Hammer, 2007; Morelli & Braganza, 2012; Ongaro, 2004; Parkes & Davern, 2011; Vanhaeverbeke & Torremans, 1999), in particular for accomplishing effective processes, process compliance and process change. Morelli and Braganza (2012) identify the lack of an accountable process owner as one of the barriers to effective sales quota development processes. Likewise, Balaji et al. (2011) identify the lack of process ownership as one of the main challenges of the new product development process and thus a hindrance to innovation. Hernaus et al. (2016) find that organizations with established process ownership are more likely to succeed with BPM initiatives in terms of improved efficiency, quality and agility of business processes than organizations with partial or no established process ownership. Maddern et al. (2014) point to a case where an organization substantially increased customer satisfaction through transformed services combining process ownership and measurement. In a case study of one-stop shops in the public sector in Italy, Ongaro (2004) finds that the process owner was crucial in a project involving radical process change. Palmberg (2010) studies three cases, and concludes that in all three cases, implementing process management with process ownership as a central dimension had strengthened the organizations’ adaptability through increased capability for process change.

4.3. Process owners’ role and responsibilities

4.3.1 Introduction

Traditionally, process owners hold overall responsibility for the process and its results (Armistead, et al., 1999; Hammer, 2007; Hammer & Stanton, 1999; Jones, 1994; Rahimi, et al., 2016; Siemieniuch & Sinclair, 2002; Vanhaeverbeke & Torremans, 1999; Willaert, et al., 2007). Some organizations give process owners a strategic role and extensive authority (Hammer, 2007). In other organizations, process owners have only an operational role (Reijers & Peeters, 2010) or seem to function in name only, with limited authority (Iden, 2012). The latter situation constitutes a typical characteristic of low BPM maturity (de Boer et al., 2015; Hammer, 2007).
Often, such situations stem from a lack of commitment to BPM among senior managers, for instance in organizations implementing BPM (or elements of BPM) first and foremost to satisfy external requirements (Iden, 2012). Process ownership can form a full- or a part-time job (Hellman et al., 2015; Palmberg, 2010), and the same person could have ownership over several processes (Harmon, 2014), often the case in smaller organizations (Dumas, et al., 2013). Also, organizations might choose to assign process ownership only for some processes, typically the largest and most important (Jeston & Nelis, 2011; Markus & Jacobson, 2010).

Literature suggests that the role of process owners can change over time, and the development of the role is connected to the organization’s BPM maturity (Hammer, 2007; Reijers & Peeters, 2010). Hammer’s process and enterprise maturity model (2007) includes process owners as one of five process enablers. Hammer describes how the role of the process owner advances over four levels of process management maturity (cf. table II). At the lowest level, informal process owners have no formal authority and mainly deal with process identification, documentation and small-scale improvements. At the most advanced level, the process owner is part of the organization’s senior decision-making body and has a whole other impact on strategic planning, budget and personnel assignments for the process. Other factors affecting process owners’ organizational role include the organizational structure and formal regulations (Ongaro, 2004), the organizational context, directions from senior management, and possible standardization of the role within the organization (Nesheim, 2011). Also, the process owner’s own initiative (Nesheim, 2011) and available time and dedication (Iden, 2012) influence the design and development of the role. The complexity of the process owner’s role increases with public intradepartmental (Ongaro, 2004) and inter-organizational (Larsen & Klischewski, 2004) process ownership, making it necessary to install joint ownership by process owners from each of the units (Davenport, 1993), combined with impersonal governance mechanisms (Markus & Jacobson, 2010).
### Maturity level

<table>
<thead>
<tr>
<th>Maturity level</th>
<th>The role and responsibilities of process owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-1</td>
<td><em>Process owners are not formally appointed.</em> At the lowest maturity level, there are no process owners with formal authority. However, an individual or a group may be informally in charge of process improvement (small-scale improvement projects), process documentation, and communication with process employees.</td>
</tr>
<tr>
<td>P-2</td>
<td><em>Process owners are appointed.</em> Process owners are responsible for developing objectives and vision for the process, undertaking process improvement and redesign, and leading a process team. The process owner has some budget control (typically of technology resources).</td>
</tr>
<tr>
<td>P-3</td>
<td><em>Process work is a priority for process owners.</em> At this maturity level, there is collaboration between process owners. Individual process owners exert some control over personnel assignments, and a higher degree of budget control than at lower maturity levels. Process owners also have control of IT-systems that support process work or process change.</td>
</tr>
<tr>
<td>P-4</td>
<td><em>Process owners are part of the senior management team.</em> At this maturity level, process owners participate in strategy formation for the process and for the organization as a whole, and in not only local, but also interorganizational process improvement. The process owner has full budget control for the process and exerts strong influence over personnel assignments.</td>
</tr>
</tbody>
</table>

**Table II.** The advancement of the process owner’s role and responsibilities in PEMM (Hammer, 2007:116-117)

Process owners’ responsibilities might be organization-wide (Novotny & Rohmann, 2010) or limited to a group or geographic area, depending on the organization’s size (Scheer & Brabänder, 2010). Process owners in smaller organizations might have a large number of responsibilities, ranging from strategic to operative. Large organizations might break up extensive and complex processes into subprocesses (Hammer, 1996), and establish a process owner hierarchy, with top-level process owners vs. subordinate process owners (Hammer, 1996; Harmon, 2014; Hertz et al., 2001). In this case, top-level process owners would have a strategic, inoperative role. More operative tasks would be delegated to a process team (Novotny & Rohmann, 2010) or to subordinate process owners, who might be tasked with managing a local instance of the process, for example a product-, location-, or customer-specific instance (Kettenbohrer et al., 2015). These then report to and make suggestions to the higher-level process owner (Novotny & Rohmann, 2010). Organizations also introduce the roles of process consultants, process analysts (Antonucci & Goeke, 2011; Doebeli, et al., 2011; Lohmann & Zur Muehlen, 2015) or process architects (Doebeli, et al., 2011; Kettenbohrer, et al., 2015) to support the process owner. Organizations might assign a Chief Process Officer to coordinate
processes and process owners’ work (Scheer & Brabänder, 2010; Van Looy, 2015), as well as a Center of Excellence in order to support process thinking and process management throughout the organization (Jeston & Nelis, 2011; Rosemann, 2010).

More than fifty studies in the review reveal a wide range of responsibilities. Findings from the literature review indicate that process owners’ responsibilities can be divided into five categories, which I will discuss in the following sections: planning and organizing, process performance management, process improvement and innovation, team leadership, and stakeholder management and advocacy.

4.3.2 Planning and organizing
The process owner should ideally be involved from the initial introduction of BPM (Elzinga, et al., 1995), might be responsible for leading the change (Ongaro, 2004) and play a role in institutionalizing BPM and process thinking in the organization (Hernaus, et al., 2016; Jeston & Nelis, 2011; vom Brocke, et al., 2014). If the organization chooses to implement a BPMS, the process owner should be part of the BPMS implementation project team (Ravesteyn & Batenburg, 2010).

The process owner’s assignment starts with process design (Doebeli, et al., 2011; Hinterhuber, 1995; Kettenbohrer, et al., 2015; Markus & Jacobson, 2010; Moses, 2011; Neubauer, 2009; Reijers & Peeters, 2010), and defining subprocesses and process boundaries through a process map (DeToro & McCabe, 1997; Maddern, et al., 2014). Process owners are responsible for ensuring standardization and documentation of processes (de Albuquerque & Christ, 2015; Hammer, 2007; Haron, 2014; Iden, 2012; Nesheim, 2011; Neubauer, 2009; Sentanin et al., 2008), and thus reduce variability (Lee & Dale, 1998). Further, an important task involves advocating compliance with the process (de Albuquerque & Christ, 2015; Hammer, 2007; Jeston & Nelis, 2011; Parkes & Davern, 2011; Siemieniuch & Sinclair, 2002; Tucker, 2015). Through process compliance, the process owner aims to avoid ‘gradual degradation into ad-hoc performance, multiple versions, and incompatible behaviours (...), with a consequent loss of organizational competence and customers’ (Siemieniuch & Sinclair, 2002:453). However process owners are also responsible for approving variations when necessary (Siemieniuch & Sinclair, 2002; Tucker, 2015) and providing guidance to process employees regarding how they should handle exceptions and errors (Dumas, et al., 2013). Process owners should also see that
the process meets any external compliance obligations, such as regulations and industrial standards (Harmon, 2014; Lu et al., 2008).

Process owners coordinate activities in the process (Harkness, et al., 1996; Kettenbohrer, et al., 2015; Neubauer, 2009; Nilsson & Sandoff, 2015) and might be responsible for establishing requirements for expertise (Nesheim, 2011). Some studies mention the process owner’s role in providing directions for information management (Seltsikas, 1999) and in integrating BPM and IT (Rahimi, et al., 2016; Smith & McKeen, 2008). A process owner should ensure alignment between the process and the organization’s overall strategy (Moses, 2011; Rahimi, et al., 2016) and lead the execution of strategies (Davenport, 1993; LaHay & Noble, 1998). In some organizations, process owners might have influence over resource allocations (Hammer, 2007; Hammer & Stanton, 1999; Kohlbacher & Gruenwald, 2011a; Markus & Jacobson, 2010; Nesheim, 2011; Neubauer, 2009), and in mature organizations even control the budget (Hammer, 2007; Hammer & Stanton, 1999) and define the strategy for the process (Hammer, 2007; Rahimi, et al., 2016). However, few studies report that process owners have such responsibilities, probably owing to the lack of organizations at the highest maturity levels.

4.3.3 Process performance management

There seems to be much agreement in the literature on BPM that one of process owner’s main responsibilities is related to monitoring and managing process performance (e.g. Dumas, et al., 2013; Jeston & Nelis, 2011; Kueng, 2000; Kuwaiti, 2004; Najmi, et al., 2005; Nenadál, 2008; Nilsson & Sandoff, 2015; Rummler & Brache, 1990; Schmiedel, et al., 2014; Sinclair & Zairi, 1995). As the process owner is accountable for the process meeting its objectives (Becker, et al., 2013; LaHay & Noble, 1998), he or she should also be involved in setting these objectives (Becker, et al., 2013; Hammer, 2007; Harrington, 1991; Markus & Jacobson, 2010; Neubauer, 2009; Parkes & Davern, 2011). Likewise, the process owner should be involved in developing performance measures (Harrington, 1991; Hertz, et al., 2001; Reijers & Peeters, 2010), and updating them in accordance with changing requirements (Hammer, 1996). Objectives and performance measures must reflect customer expectations (LaHay & Noble, 1998; Scheer & Brabänder, 2010; Spanyi, 2010) and the organization’s requirements for effectiveness and efficiency (DeToro & McCabe, 1997; Dumas, et al., 2013; Harrington, 1991; Joseph & George, 2007; Steketee, 2010). Employing these measures, process owners should monitor performance (e.g. Nenadál, 2008; Palmberg & Garvare, 2006; Rahimi, et al., 2016; Sentanin, et al., 2008), and take action if the process objectives are not met (Dumas, et al., 2013; Harmon, 2014).
4.3.4 Process improvement and innovation

Extant research particularly emphasizes the process owners’ role in process change, as the organization’s entrepreneurs (Kueng, 2000; Vanhaverbeke & Torremans, 1999), agents for process renewal (Siemieniuch & Sinclair, 2002) and responsible for process improvement results (DeToro & McCabe, 1997). Related to the criticism against BPM for placing too much emphasis on exploitation (Benner & Tushman, 2002), some researchers have advocated that although process owners play an important part in incremental and evolutionary change, they should be excluded from projects aiming for radical and revolutionary change (Stoddard & Jarvenpaa, 1995). Several researchers however contend that process management embraces both exploitation and exploration (Ng, et al., 2015; vom Brocke & Schmiedel, 2015), and that process exploitation and process exploration are in fact interdependent (Ng, et al., 2015). Within this perspective, process owners have an important role to play in incremental process improvement (Balzarova et al., 2004; Najmi, et al., 2005; Parkes & Davern, 2011; Reijers & Peeters, 2010) and process innovation (Balaji, et al., 2011; Hammer, 2007; Ongaro, 2004; Welke, 2015). Process owners should however adapt their management approach in accordance with their objective (vom Brocke, et al., 2016), and search for new opportunities beyond merely measuring performance (Welke, 2015). Incremental process changes often result from a ‘bottom up’ practice aimed at resolving immediate issues (Jones, 1994), in which process owners review performance indicators (Jones, 1994) and process audits (Wharton, 1997), and assess and correct process faults (Cronemyr & Witten, 2010). Process owners are also the natural recipient of change suggestions from the organization (Jeston & Nelis, 2011; Maddern et al., 2007), having encouraged process employees to identify problems and possibilities for improvement (Jeston & Nelis, 2011). Process innovation might rather be accomplished through a ‘top down’ project addressing more strategic concerns (Jones, 1994), undertaken by a process improvement team led by the process owner (DeToro & McCabe, 1997; Hammer, 1996; Jones, 1994).

Process owners must follow the competitive environment, technological progress and changing customer requirements (Hammer, 1996; Harrington, 1991; Ho et al., 2009; Jones, 1994; Palmberg & Garvare, 2006; Vanhaverbeke & Torremans, 1999) in order to detect and evaluate the need for process improvement and identify opportunities for process innovation (Buavaraporn & Tannock, 2013; Elzinga, et al., 1995; Hammer & Stanton, 1999). The process owner should ensure that proposed changes are beneficial for the process and for the organization as a whole (Jones, 1994; Mclaughlin, 2010; Siemieniuch & Sinclair, 2002), in
order to avoid suboptimization (Harrington, 1991). If they are beneficial, then the process owners initiate process changes (e.g. Dumas, et al., 2013; Hammer & Stanton, 1999; Jones, 1994; Kohlbacher & Gruenwald, 2011a; Seltsikas, 1999). Further, process owners coordinate and lead change projects (Balaji, et al., 2011; Massey, et al., 2002; Ongaro, 2004; Ramcharamdas, 1994; Reijers & Peeters, 2010), including the implementation of the redesigned business process (Jeston & Nelis, 2011; Parkes & Davern, 2011). In a recent case study, Ohlsson et al. (2017) proposed an innovative process improvement and decision-making method based on prioritizing and categorizing business processes, with a strong end-to-end perspective. The authors state that process owners are key to the implementation of this method. Based on their insight, process owners provide input to the analysis. Process owners also benefit from the analysis, as it indicates which processes the organization should focus on, counteracts silo-thinking and helps process owners maintain a holistic view of the organization and ensure strategic alignment during process change.

4.3.5 Team leadership

The role of process owners does not entail supervisory responsibilities (Harrington, 1991), as they remain with the functional managers. Research nevertheless shows that process owners still have important leadership responsibilities. The process owner leads a cross-functional process team (DeToro & McCabe, 1997; Elzinga, et al., 1995; Harrington, 1991; Kujansivu, 2008; Nilsson & Sandoff, 2015; Rahimi, et al., 2016; Thor et al., 2010), which assists the process owner, particularly in regard to process performance management and process change (LaHay & Noble, 1998). In order for the process team to function well, the process owner must update the team about customer requirements and process and business objectives (Harrington, 1991; Jones, 1994) and make sure that the team is adequately trained in BPM concepts and practices (Harrington, 1991).

4.3.6 Stakeholder management and advocacy

Process owners represent and promote the process (Hammer, 2007; Reijers & Peeters, 2010; Rummler & Brache, 1990), and communicate with various stakeholders (Hammer & Stanton, 1999; Jeston & Nelis, 2011; Nesheim, 2011; Reijers & Peeters, 2010). Process owners should seek to optimize supply lines by maintaining contact and negotiating with suppliers regarding necessary inputs (Harmon, 2014; Nenadál, 2008). While monitoring and improving processes, process owners need to maintain a strong customer focus and ‘listen to the ‘voice of the customer’’ (Nenadál, 2008:461). This requires maintaining contact with the customer
(Harrington, 1991), and trying to understand the customers’ problem-to-be-solved and which current and future value the process might offer to the customers in this regard (Welke, 2015). Trkman et al. (2015) argue that organizations seeking to really provide value to customers should consider not only internal processes but also customers’ processes, and establish the role of a customer process owner. Based on a thorough understanding of both parties’ processes, a customer process owner should adapt internal processes and propose advantageous changes in the customers’ processes.

Process owners should promote and facilitate teamwork in the organization (Hammer, 1996; Ongaro, 2004) and secure a feeling of ownership of the process among process employees, helping them see the ‘big picture’ of the process work (Hammer, 1996:84). Communicating process objectives and employing process results strategically in the organization helps process owners create awareness of the process in the organization (Iden, 2012) and motivate process employees (Hammer & Stanton, 1999; Jeston & Nelis, 2011). Process owners may also stimulate process awareness through process models and through training programs for employees (Balzarova, et al., 2004; Hammer, 2007; Palmberg & Garvare, 2006).

End-to-end responsibility for a process often crosses unit borders, necessitating effective collaboration with functional managers (Hammer & Stanton, 1999; Harrington, 1991; Jones, 1994; Nesheim, 2011; Palmberg & Garvare, 2006). In supporting functional departments (Nesheim, 2011), process owners need to adopt a coaching leadership style, as a leader who should represent a resource for the process employees (Hammer, 1996). Process owners must also be able to deal with senior management, in order to secure support and resources (Harrington, 1991). Collaboration between process owners, for instance, through formal process councils, induces a consideration of the needs of not only the individual process, but of the organization as a whole (Hammer, 1996:86). Through such collaboration, process owners work on the interfaces between processes (Armistead, 1996; Hammer, 2007; Hammer & Stanton, 1999; Rumlmer & Brache, 1990; Scheer & Brabänder, 2010), set directions and priorities (Hammer, 2010), discuss progress and resolve potential conflicts (Amiruddin et al., 2013) and exchange best practices:

Managing by process is viewed as key to the changes at Xerox. It combines two benefits of a large company—institutional know-how and economies of scale—with the empowerment and entrepreneurship that are central to achieving the "Xerox 2000" vision. This is accomplished by the core process champions and owners through cross-organizational process owner councils. Council members are owners of the subprocesses comprising the end-to-end core process. The
process owner council is literally a company-wide learning network. Its members, using the Xerox Business Architecture as the context, exchange best practices, benchmark both within Xerox divisions and with external companies, and execute coordinated process reengineering initiatives. (Ramcharamdas, 1994:36)

Close collaboration between process owners also contributes to standardizing the process owner role (Nesheim, 2011).

4.4 Obstacles to effective process ownership

4.4.1 Tension between the process and functional units

Several studies point to process owners’ challenges related to the organizational matrix structure with a process organization in addition to functional divisions. The process owner’s role in not only supporting but also controlling the work of functional units creates an inherent tension between process owners and the functional organization (Hammer & Stanton, 1999; Nesheim, 2011). Resistance among functional managers to the implementation of end-to-end process ownership (Maddern, et al., 2014) and a lack of effective communication and collaboration between process and functional units (Van Looy, 2015) can make it difficult for process owners to control the process, effectuate process change and effectively function as a resource. Insufficient effort and actions to make the matrix structure work can result in unclear roles and responsibilities (Armistead, et al., 1999; Smart, et al., 2009), ambiguities between process owners and functional managers (Smart, et al., 2009) and possible incompatibilities in goals and priorities (Hellström, et al., 2010; Siemieniuch & Sinclair, 2002). Process owners frequently experience an uneven distribution of power to the disadvantage of the process owner and the process organization: ‘the power in most companies still rests in vertical units, (...) and those fiefdoms still jealously guard their turf, their people and their resources’ (Hammer & Stanton, 1999:108). Nesheim (2011) describes an organization with a matrix structure where functional managers and process owners are meant to play complementary roles. However, the boundaries of the process owner role are clear; in cases of disagreement between process owners and functional managers, the functional manager has the final word. An uneven distribution of power has a particularly negative impact on process improvement and innovation (Van Looy, 2015). Also, process owners’ leadership might be challenged by the fact that organizational employees in the matrix report to process owners and functional leaders, but might be more likely to follow the functional leader even on issues that naturally should be discussed with the process owner (Wharton, 1997).
4.4.2 Obstacles related to insufficient time, inadequate training and low process awareness

Other obstacles to effective process ownership involve a lack of time to fulfill the job (Iden, 2012; Lee & Dale, 1998; Nilsson & Sandoff, 2015; Peñaranda et al., 2010) and insufficient training (AlShathry, 2016). In a multiple case study of 23 Norwegian firms that had implemented quality systems and most of which had obtained certification in accordance with an ISO standard or an industry norm, Iden (2012) finds that most of the firms had appointed process owners, but many seemed to exist in name only. Iden explained this issue as due to a lack of dedication from the process owners, too low prioritization among the senior management and too little time for the process tasks. In a situation with dual responsibilities and a high workload, other responsibilities are prioritized. An important challenge related to the process owners’ responsibilities is establishing correct and effective performance indicators for the process (Maddern, et al., 2014). Ineffective performance measurement represents a major concern, as an obstacle to process control and actual accountability (Dumas, et al., 2013; Spanyi, 2010). Still, in a study of 10 Saudi Arabian organizations, AlShatry (2016) finds that several organizations failed to define the necessary skills for process owners and provide adequate training. Some of the process owners had limited understanding of their own role, and synchronization between different process owners was poor. Such issues can be ascribed to a generally low process awareness and low acceptance for process-orientated work in the organization (Iden, 2012; Nilsson & Sandoff, 2015). A lack of time or training might to a certain extent be alleviated by supporting roles such as a process team (Nilsson & Sandoff, 2015), process consultants, process analysts (Antonucci & Goeke, 2011; Doebeli, et al., 2011; Lohmann & Zur Muehlen, 2015) or process architects (Doebeli, et al., 2011; Kettenbohrer, et al., 2015).

4.5 Authority in process ownership

Authority and influence in the organization are important enablers of effective process ownership (Hammer & Stanton, 1999; Kohlbacher & Gruenwald, 2011a; Kohlbacher & Reijers, 2013; Nenadál, 2008; Parkes & Davern, 2011; Schmiedel, et al., 2014). Parkes and Davern (2011) demonstrate the importance of credible, visible and powerful process owners as enablers in business process change. In the following sections, I present research on sources of authority for process owners, classified in accordance with Harrington (1991:48), who concludes that authority can be provided in the form of formal authority; it can be asserted; and/or it can be earned.
4.5.1 Formal authority

The role of process owners typically does not entail formal authority in the organizational hierarchy, and their control over financial resources and employees is limited (Nilsson & Sandoff, 2015). A way of seeking a perception of formal authority is linking process ownership to a formal leadership position as a dual responsibility. Rather than hiring among external candidates for the position of process owners, organizations commonly appoint internal candidates, selecting from the pool of leaders in the organization (Iden, 2012; Lohmann & Zur Muehlen, 2015; Palmberg, 2010). This practice can entail advantages and disadvantages. Linking process ownership to an established leadership position can provide more authority and lower organizational complexity compared with a situation with separate roles and process owners without previous leadership positions (Palmberg, 2010). This practice can however also result in few actual changes (Palmberg, 2010) and reduce the perception of novelty and value related to process ownership (Reijers & Peeters, 2010). Wearing two hats simultaneously can also involve challenges related to perspective and priorities for the process owner or functional manager (Iden, 2012). The organization might question - sometimes rightly so – whether the process owner/functional manager actually takes an end-to-end perspective, or is biased towards his or her own functional unit (Jeston & Nelis, 2011). It can also be challenging to gain consensus across functional managers (ibid.). Process owners who have not previously had a leadership position and do not have experience, however, might face even more severe issues related to legitimacy and authority (Palmberg, 2010). Assigning process ownership to individuals with no hierarchical leader position is therefore only suitable for lower-level or technical processes where subject matter expertise is of high importance (Harmon, 2014). A case study of a large reengineering project (Sarker & Lee, 1999) suggests that sometimes the process definition and selection of process owners can be based on senior managers’ hidden agendas to secure their own positions.

While organizations commonly appoint process owners among functional managers (Iden, 2012; Palmberg, 2010; Willaert, et al., 2007), several researchers advocate that a process owner should be part of senior management to ensure the necessary legitimacy, influence and respect in the organization (Hammer, 2007; Hammer & Stanton, 1999; Hellman, et al., 2015; Hertz, et al., 2001; Jones, 1994; Rummler & Brache, 1990; Teng et al., 1996). Appointing process owners among senior management can signal that process management is a priority in the organization (Hammer & Stanton, 1999) and ensure that process owners are involved in formulating the business strategy (Rahimi, et al., 2016). Tan et al (2009) describe the
appointment of process owners among senior managers as instrumental to the successful implementation of ITIL in a large Australian health organization. The process owners’ positions signaled senior management support and championship of ITIL, and the authority related to the formal position of the process owners made them particularly equipped to deal with resistance to change and give the required directions. Pritchard and Armistead (1999) find that organizations in later stages of BPM more often appointed process owners among senior managers and the supervisory or front-line level than organizations in earlier stages. This finding indicates that the organizations concluded based on experience that assigning process ownership to senior management is beneficial. However, in a survey of 324 organizations, Škrinjar and Trkman (2013) do not find evidence that the hierarchical level of the process owner is critical for increasing process orientation. Other authors concluded that senior management should be accountable for high-level end-to-end processes, while process ownership for lower-level or subprocesses can be assigned to middle-managers of functional units (Jeston & Nelis, 2011; Willaert, et al., 2007).

4.5.2 Asserted authority

Asserted authority entails that senior management adequately defines the process owners’ role and responsibilities (Van Looy, 2015), with end-to-end accountability for the process, and supports the process owners through words and actions. Decision rules should also be established (Markus & Jacobson, 2010). Also, Leite et al. (2016) propose a scheme for representing process owner information in process models. They conclude based on a case study that better representation of process owner information improves process control through clearly established responsibilities and accountability, easily visible for the organization.

Researchers have described support from senior management as an important determinant of successful process ownership (Kohlbacher & Gruenwald, 2011a; Ongaro, 2004), and of successful BPM in general (e.g. Al-Mashari & Zairi, 1999; Bai & Sarkis, 2013; Niehaves, et al., 2013; Parkes & Davern, 2011). Senior management support provides political and financial support for the process (Bai & Sarkis, 2013) and assists process owners in conflicts within the matrix. Researchers emphasize the significance of senior management support in regards to process innovation (Davenport, 1993; Van Looy, 2015):

> Digital innovations strongly depend on top management commitment and leadership attention to business processes (...) if top managers rather support vertical departments working as silos instead of horizontal end-to-end value chains, they are likely to miss out on a wider perspective on business opportunities to create innovation through IT. (Van Looy, 2015:254)
Senior management should promote and openly support process ownership in the organization (Spanyi, 2010). Further, successful functioning of an organizational matrix requires senior management to build trust and dynamics between the two dimensions (Palmberg & Garvare, 2006). This might be accomplished by encouraging mutual support and dialogue, for example, through establishing suitable meeting arenas (Nesheim, 2011) and an appropriate organizational culture (Hammer, 2007; Schmiedel, et al., 2014; Siemieniuch & Sinclair, 2002; Van Looy, 2015; Willaert, et al., 2007). Senior management support must be sustained over time. Maddern et al. (2014) describe a case where the initial success of process management and process ownership of end-to-end processes waned as the organization and senior management no longer felt the same need, leading senior managers to cease communication on the importance of process ownership:

Often, specific contextual issues such as mergers, rising levels of complaints, or individual process concerns can trigger BPM implementation. Once these issues are addressed, the resource required to maintain the process infrastructure can be under threat. The programme director at Case A captures this issue ‘they forget how bad it was’. Case G had achieved remarkable success in customer service, clearly attributed to the introduction of process owner teams, accountable for end-to-end performance. However, the energy, resource and focus required to sustain performance had diminished. Process owners had been re-directed to other programmes and investment budgets were limited. Measurement frequency and scope was reduced with providers complaining about the time and effort required to supply the necessary data. Most significantly, perhaps, communication of the programme was curtailed. Following a widely communicated launch, the (successful) outcomes of process ownership had been posted on the front page of the company intranet. Two years after launch, process issues and performance were no longer ‘front page news’. (Maddern, et al., 2014:1310)

4.5.3 Earned authority

Process owners can also earn legitimacy and influence by virtue of their own competence and personal characteristics. Some authors suggest that senior managers considering process owner candidates should look for a candidate who feels ownership towards the process, and has the most interest in the process – the most to gain from process success and the most to lose from its failure (Doebeli, et al., 2011; Harrington, 1991; Moses, 2011; Rummler & Brache, 1990). The purpose is to find a process owner truly committed to process work, as a strong and visible commitment might more easily inspire process employees to comply with process change (Eriksson & Ujvari, 2015). Other sources of earned influence are the process owner’s competence and skills, inspiring respect in the organization (Harrington, 1991). Literature points to strong domain knowledge (Nilsson & Sandoff, 2015; Steketee, 2010) and process knowledge (Hammer, 1996; Harrington, 1991; Scheer & Brabänder, 2010) - to ‘have the biggest picture of all’ (Hammer, 1996:84) - as sources of influence. Also, performing the process owner
job well will over time increase the process owner’s credibility. This demands that process owners have sufficient time to perform and prioritize responsibilities (Iden, 2012; R. G. Lee & Dale, 1998; Nilsson & Sandoff, 2015; Peñaranda, et al., 2010). Further, process owners benefit from technical process management competence (Harkness, et al., 1996; Ongaro, 2004), acquired through appropriate training (AlShathry, 2016). This also requires that the process owner is trained in process management and analysis (Harrington, 1991; Scheer & Brabänder, 2010). Some studies emphasize a need for the process owner to have a holistic view and understanding of the organization, including its environment and customers, and to work for the benefit of the whole organization not just the process (Harrington, 1991; Moses, 2011; Nilsson & Sandoff, 2015; Ongaro, 2004; Tansley et al., 2001). Tansley et al. (2001) describe a case study where the implementation of an ERP system did not result in fundamental changes. An important part of the reason for the failure was related to silo mentality and process owners who were reluctant to look beyond their own process. They had insufficient understanding of the ERP system and its potential for transforming processes, and saw potential changes as threatening their own domain and position.

Respect and trust can also be earned based on personal skills. Several researchers have found leadership skills, interpersonal skills and communication skills (Davenport, 1993; Hammer, 1996; Kohlbacher & Gruenwald, 2011a; Nesheim, 2011; Ongaro, 2004; Teng, et al., 1996) essential for process owners, as ‘their force is through the power of the spoken word’ (Steketee, 2010:384). As leaders, process owners must have the ability to influence others (Spanyi, 2010), to motivate a process team (Davenport, 1993; Harrington, 1991) and process workers (Nilsson & Sandoff, 2015) to strive for process success. Being able to formulate and communicate process objectives, strategies, measures and results helps process owners motivate for optimal process performance and for process changes, even when long-term effects are more obvious than short-term ones (Nilsson & Sandoff, 2015; Van Looy, 2015). Communication skills include the ability to listen to others’ opinions and ideas, share information in various settings and arenas and explain concepts and changes pedagogically (Nilsson & Sandoff, 2015). For process owners, it is crucial to establish a good relationship with the functional organization (Hammer & Stanton, 1999; Nesheim, 2011; Palmberg & Garvare, 2006). Process owners need to make functional managers perceive them not as a threat, but as a value-adding resource (Rummler & Brache, 1990). Regarding process changes, the process owner must understand how proposed changes impact the functional units and their employees, as well as possible reasons for resistance to change (Baumöl, 2010). Based on cases from healthcare organizations,
Nilsson and Sandoff (2015) conclude that process owners must work consistently to involve relevant stakeholders, and foster a positive and trustful climate. This might be achieved through a high degree of transparency related to the process owners’ expected contribution and to how process owners actually work.

5. DISCUSSION

5.1. A framework of process ownership

Based on this systematic literature review, I propose a framework (Tables III & IV) to present and structure the findings, and which can be used to guide the further progress of the research field, as well as a map for practitioners. The first part of the framework (Table III) illuminates process owners’ role and responsibilities. It includes my proposed definition synthesized from previous definitions (cf. section 2.3), as well as findings on process owner responsibilities, categorized in accordance with the subcategories presented in sections 4.3.2 – 4.3.6. In addition, this part of the framework presents contextual factors organizations should be aware of when designing the role (cf. section 4.3.1), such as process complexity and scope (Larsen & Klischewski, 2004; Nesheim, 2011; Ongaro, 2004), and level of the process in a process hierarchy (Hammer, 1996; Harmon, 2014; Hertz, et al., 2001). The second part of the framework (Table IV) comprises obstacles to effective process ownership (cf. section 4.4), sources of authority in process ownership (cf. section 4.5), and finally outcomes that might be expected if the organization succeeds with process ownership (cf. section 4.2).
<table>
<thead>
<tr>
<th>Process owner definition</th>
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<tr>
<td>A manager with end-to-end responsibility for a process and its performance, results, incremental improvement and innovation</td>
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<th>Process owner responsibilities</th>
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<tr>
<td><strong>Planning and organizing:</strong></td>
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<tr>
<td>Design the process (Doebeli, et al., 2011; Kettenbohrer, et al., 2015; Markus &amp; Jacobson, 2010; Reijers &amp; Peeters, 2010)</td>
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<td>Define subprocesses and process boundaries (process map) (DeToro &amp; McCabe, 1997; Maddern, et al., 2014)</td>
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<tr>
<td>Ensure standardization and documentation of processes (Hammer, 2007; Harmon, 2014; Iden, 2012; Nesheim, 2011; Sentanin, et al., 2008)</td>
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<tr>
<td>Advocate compliance with the process (e.g. Hammer, 2007; Siemieniuch &amp; Sinclair, 2002; Tucker, 2015)</td>
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<td>Approve variations when necessary (Siemieniuch &amp; Sinclair, 2002; Tucker, 2015)</td>
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<td>Provide guidance as to handling exceptions and errors (Dumas, et al., 2013)</td>
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<td>Ensure alignment with strategy and execute strategies (Thomas H. Davenport, 1993; LaHay &amp; Noble, 1998; Moses, 2011; Rahimi, et al., 2016)</td>
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<tr>
<td>Influence resource allocation (e.g. Hammer, 2007; Hammer &amp; Stanton, 1999; Kohlbacher &amp; Gruenwald, 2011a; Nesheim, 2011)</td>
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<td><strong>Process performance management:</strong></td>
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<td>Define objectives (e.g. Becker, et al., 2013; Hammer, 2007; Harrington, 1991; Markus &amp; Jacobson, 2010)</td>
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<tr>
<td>Monitor and manage process performance (e.g. Dumas, et al., 2013; Nenadál, 2008; Nilsson &amp; Sandoff, 2015; Sinclair &amp; Zairi, 1995)</td>
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<tr>
<td><strong>Process improvement and innovation:</strong></td>
</tr>
<tr>
<td>Follow the competitive environment, technological progress and changing customer requirements (Hammer, 1996; Harrington, 1991; Ho, et al., 2009; Jones, 1994; Palmberg &amp; Garvare, 2006; Vanhaverbeke &amp; Torremans, 1999)</td>
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<tr>
<td>Detect and evaluate needs and opportunities for incremental process improvement and innovation (Buavaraporn &amp; Tannock, 2013; Elzinga, et al., 1995; Hammer &amp; Stanton, 1999)</td>
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<tr>
<td>Receive change suggestions from the organization (Jeston &amp; Nelis, 2011; Maddern, et al., 2007)</td>
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<tr>
<td>Check for possible suboptimization (Harrington, 1991; Jones, 1994; Mclaughlin, 2010; Siemieniuch &amp; Sinclair, 2002)</td>
</tr>
<tr>
<td>Initiate process change (e.g. Dumas, et al., 2013; Hammer &amp; Stanton, 1999; Jones, 1994; Kohlbacher &amp; Gruenwald, 2011a; Seltsikas, 1999)</td>
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<tr>
<td>Coordinate and lead change project (Balaji, et al., 2011; Massey, et al., 2002; Ongaro, 2004; Ramcharamdas, 1994; Reijers &amp; Peeters, 2010)</td>
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<tr>
<td>Promote the process design (Hammer &amp; Stanton, 1999; Jeston &amp; Nelis, 2011)</td>
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</table>
### Team leadership:
Lead a process team (e.g. DeToro & McCabe, 1997; Jeston & Nelis, 2011; Nilsson & Sandoff, 2015; Rahimi, et al., 2016)

### Stakeholder management and advocacy
Create process awareness (e.g. Balzarova, et al., 2004; Iden, 2012; Palmberg & Garvare, 2006)
Represent and promote the process (e.g. Harrington, 1991; Parkes & Davern, 2011; Reijers & Peeters, 2010; Rummler & Brache, 1990)
Communicate with stakeholders (Hammer & Stanton, 1999; Jeston & Nelis, 2011; Nesheim, 2011; Reijers & Peeters, 2010)
Maintain and promote a strong customer focus (e.g. Nenadál, 2008; Palmberg & Garvare, 2006; Trkman, et al., 2015; Welke, 2015)
Collaborate with other process owners (e.g. Amiruddin, et al., 2013; Nesheim, 2011; Ramcharandas, 1994; Rummler & Brache, 1990)
Collaborate with functional managers (Hammer & Stanton, 1999; Nesheim, 2011; Palmberg & Garvare, 2006)
Maintain contact with suppliers (Harmon, 2014; Nenadál, 2008)
Promote and facilitate teamwork in the organization (Hammer, 1996; Ongaro, 2004)
Secure feeling of ownership among process employees (Hammer, 1996)

### Organizational factors influencing the design of a process owner's role
Process complexity and scope (Larsen & Klischewski, 2004; Nesheim, 2011; Ongaro, 2004)
Level of the process in a process hierarchy (high-level vs. low-level) (Hammer, 1996; Harmon, 2014; Hertz, et al., 2001)

**Table III.** A framework of research on process owners, part 1: Process owner role and responsibilities
### Obstacles to effective process ownership

- Inherent tension between process and functional units (Hammer & Stanton, 1999; Nesheim, 2011; Siemieniuch & Sinclair, 2002)
- Insufficient power compared to leaders of functional units (e.g. Hammer & Stanton, 1999; Nesheim, 2011; Van Looy, 2015)
- Insufficient training (AlShathry, 2016)
- Insufficient dedication from process owners (Iden, 2012)
- Insufficient senior management support (Iden, 2012)
- Difficulties establishing correct performance indicators (Maddern, et al., 2014)
- Low process awareness in the organization (Iden, 2012; Nilsson & Sandoff, 2015)

### Sources of authority in process ownership

**Formal authority**
- Formal position sufficiently high up in the organizational hierarchy (e.g. Hammer & Stanton, 1999; Hellman, et al., 2015; Rahimi, et al., 2016)

**Asserted authority**
- Clear definition of end-to-end accountability, responsibilities and decision rules (Bucher & Winter, 2010; Markus & Jacobson, 2010; Van Looy, 2015)
- Senior management support (e.g. Kohlbacher & Gruenwald, 2011a; Maddern, et al., 2014; Ongaro, 2004; Spanyi, 2010)

**Earned authority**
- Passion and commitment (Eriksson & Ujvari, 2015).
- Domain knowledge (Nilsson & Sandoff, 2015; Steketee, 2010)
- Thorough understanding of the organization, including its environment and customers (e.g. Harrington, 1991; Ongaro, 2004; Tansley, et al., 2001).
- Personal skills (leadership-, communication-, and interpersonal skills) (e.g. Davenport, 1993; Kohlbacher & Gruenwald, 2011a; Nesheim, 2011)
- Technical process management competence (Harkness, et al., 1996; Ongaro, 2004)

### Outcomes of effective process ownership (if combined with process performance measurement and process improvement)

- Increased process efficiency and effectiveness (Hernaus, et al., 2016; Lockamy & McCormack, 2004; Markus & Jacobson, 2010)
- Increased customer satisfaction (Maddern, et al., 2014; D. Weitlaner, et al., 2012)
- Increased adaptability (Balaji, et al., 2011; Ongaro, 2004; Palmberg, 2010)
- Increased financial performance (Kohlbacher & Gruenwald, 2011b; D. Weitlaner, et al., 2012)

**Table IV.** A framework of extant research on the process owner role, part 2: Effective process ownership; obstacles, sources of authority, and outcomes
5.2 Recommendations and practical implications

Several studies building on qualitative and quantitative research methods demonstrate the importance of well-functioning process owners in organizations that practice BPM. It is clear that process owners, particularly in conjunction with established practices of process performance measurement and process improvement methods, can have a positive impact on process performance, as well as on process improvement and innovation. These findings suggest that process owners can make an essential contribution to fulfilling the triple purpose of business process management: process control, incremental improvement and radical improvement (Ng, et al., 2015). A conclusion is a clear recommendation that organizations focusing on processes should appoint process owners. Although most of the studies included in the review offer insight into only one or a few responsibilities of process owners, in sum they form a comprehensive picture of what process owners should do. Key responsibilities remain ensuring process awareness and compliance, monitoring performance and taking necessary action toward process change in stride with changing customer requirements, technological innovations and the competitive environment. In order to accomplish process control, improvement and innovation, process owners must also exercise effective leadership and build relationships with important stakeholders, including customers, functional managers, other process owners and senior managers. A significant implication for organizations would be that appointment of process owners must entail real responsibility for these areas.

The literature review has revealed that the major obstacles to effective process ownership are related to an insufficient organizational investment in making the matrix structure and the process owner role work optimally. Overcoming challenges related to the matrix requires determination and effort from senior management and from the parties directly involved in the matrix. Sufficient authority remains the most important enabler of effective process ownership, whether the authority stems from a formal vertical leadership position, is asserted through an adequate definition of the role and sustained support from senior management, or is earned based on personal skills, characteristics and commitment.

No recipe for business process management fits all organizations (vom Brocke, et al., 2014), and each organization must find solutions for process ownership suited for their organizational context, size, processes and ambitions. The proposed framework demonstrates factors and alternatives senior management need to consider when implementing process ownership in the organization.
5.3 Opportunities for future research

Researchers have pointed out the need for a better grounding of BPM in theory (Hung, 2006; Škrinjar & Trkman, 2013; Smart, et al., 2009), as BPM as a research field can be characterized as fairly ‘atheoretical’ (Trkman, 2010:125). With a few notable exceptions, studies included in this review testify to the same; few of the papers claim to build theory on process owners or to apply theoretical lenses to shed light on findings on process ownership. Future studies should seek to build theory on process owners and might relate findings and theories on process owners to theories in other fields, for example, leadership theories and dynamic capability theory.

Important questions remain as to what is the optimal arrangement for budget control and the division of power between process owners and functional managers, as extant research has largely pointed to challenges rather than to solutions related to these areas. Another important avenue for future research would be studying in which contexts appointing a few professional full-time process owners, each responsible for a group of processes, might be a better option than appointing a number of process owners with dual responsibilities.

Given the significance of the role, further research might investigate why senior managers of many organizations still choose not to establish process ownership or to take sufficient steps to make the role an effective instrument for value creation. Could one of the reasons be inadequate understanding of BPM and process ownership, or a perception of process management and process ownership as a threat to senior managers’ position and competence, which traditionally is related to leading functional organizations?

Digital transformation and digitalization offer new opportunities for research. Technological advances like robotic process automation (RPA) are likely to have an increasing impact on business processes in the years ahead. This opens up a new range of questions that have been unexplored by extant research. What will it mean for a process owner to lead a process where some or all of the activities are performed with RPA? Where are the interfaces between process owners and chief digital officers in leading digital process change? Future research would profit from investigating how digital transformation and RPA affect the role, challenges and necessary competence of process owners.
6. CONCLUSION

The aim of this study was to determine the state-of-the-art in research on the role of process owners within business process management. The results from the review emphasize the importance of appointing process owners as part of organizations’ process governance, and of making the role a real instrument for process control, improvement, and innovation (Ng, et al., 2015).

A systematic and extensive review has provided a deeper understanding of the accumulated knowledge base on process ownership in organizations practicing BPM. Whereas previous studies concluded that BPM research provides limited insight into the role of process owners (Reijers & Peeters, 2010), the systematic review and synthesis of fragmented findings from one hundred academic papers and ten books enabled the formation of a broad picture of process ownership. The review can facilitate researchers’ search for relevant studies. Based on the review, I have developed a comprehensive framework that future research can build upon. The framework is equally of value for practitioners. Ultimately, the responsibility for making process ownership work rests with senior managers. A framework summarizing and highlighting the accumulated knowledge and recommendations on process ownership is an instrument for senior managers seeking to implement or advance process ownership in their organization. The framework specifies responsibilities senior management should trust process owners with, and thus serves as a tool for designing the role. Furthermore, the framework illuminates the potential obstacles to effective process ownership that the organization might encounter, and which require particular attention. The framework also identifies sources of authority which constitute important enablers of effective process ownership. Finally, the comprehensive framework provides valuable information for process owners who experience that their responsibilities, mandate, authority, and possibility for successfully fulfilling the role are limited, and who seek to change this situation.

A possible limitation of the study is that the literature search did not include conference databases. However, I feel confident that highly relevant conference papers were identified during the extensive search for backward references. A rigorously conducted and documented research method in accordance with recommendations from Okoli and Schabram (2010) and Kitchenham (2004) increases the validity of the study.
REFERENCES


**Appendix A: Literature search; search terms and number of results**

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**Appendix A.** Literature search; sources, search terms and number of results.
## JOURNAL ARTICLES AND CONFERENCE PAPERS

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ABSTRACT

Process owners are a central element of business process management (BPM) and process governance, but the role is highly demanding, and many organizations struggle with establishing effective process ownership. However, empirical research focusing on process owners remains scarce. The purpose of this study is to develop an understanding of how organizations can make process ownership work. Through a global Delphi study with two expert panels consisting of academics and practitioners from 23 countries, this study generated a set of 20 capabilities required in order for process owners to succeed. This is the first study to look at managerial aspects of BPM through a global Delphi study. The findings extend the knowledge base of academics regarding process ownership and matrix organizations and inform the management of organizations. Implications for practice are important, for helping leaders successfully establish process ownership and as guidance for process owners.

Keywords:
Business process management, BPM, process owners, process governance, process change
1. INTRODUCTION

The purpose of this study is to develop an understanding of how organizations can make process ownership work. Process owners have a key role in organizations practicing business process management (Hammer, 2007; Iden, 2012; Smart, et al., 2009; Trkman, 2010) and a central part of process governance (Markus & Jacobson, 2010; Spanyi, 2010). As process owners have the overall responsibility for the process, traditionally with end-to-end authority, they are vital for process success (Balaji et al. 2011). Research indicates that process ownership in conjunction with process performance measurement (Kohlbacher & Gruenwald, 2011b) and continuous process improvement methods (D. Weitlaner, et al., 2012) lead to higher financial performance and customer satisfaction. In particular, the role of process owners in ensuring the effectiveness of the process (Lockamy & McCormack, 2004) and in driving through change (Kohlbacher & Reijers, 2013; Ongaro, 2004) has been emphasized.

The process owner has been titled ‘a leader, an entrepreneur and a negotiator’ (Kueng, 2000:81), a ‘change agent’ (Siemieniuch & Sinclair, 2002), and an ‘evangelist’ for customer interests (Hammer & Stanton, 1999). This is a tall order to fill, particularly because process owners also face severe organizational challenges, in particular stemming from operating within an organizational matrix where the process is a cross-functional layer on top of functional units (Hammer & Stanton, 1999; Nesheim, 2011; Vanhaverbeke & Torremans, 1999).

A large percentage of process-oriented organizations appoint process owners (Iden, 2012; Neubauer, 2009), and making process ownership work is very important for organizations. However, the role is highly demanding, many organizations struggle with establishing process ownership according to the principles set out in the literature (Hammer, 2010; Spanyi, 2010), and some organizations appoint process owners without taking steps to make process ownership real and effective (Iden, 2012), perhaps also because the knowledge base this would require is insufficient. Reijers and Peeters (2010) stated:

the literature provides limited insight into process ownership. (…) only little empirical research has been conducted in this area. (…) most articles in which process ownership is touched are prescriptive in nature, but are in disagreement in many respects. This leads to a situation in which little consensus exists on the preferable fulfillment of process ownership and no insight at all into how organizations actually implement this role. (Reijers & Peeters, 2010:3)

This study seeks to answer the following research question: How can organizations make process ownership work?
The research question is addressed through an international Delphi study with two expert panels: accomplished academics and highly experienced BPM practitioners from 23 countries. This is the first study to look at managerial aspects of BPM through a global Delphi study, and one of the most international academic Delphi studies undertaken within the field of BPM.

This paper responds to a call for a larger focus on managerial and organizational aspects of BPM (Kohlborn, et al., 2014; Mendling, 2016; Recker, 2014; Roeser & Kern, 2015) within academic research. The study extends the academic knowledge base on effective process ownership by building a framework of important capabilities. A greater understanding of how to achieve effective process ownership is also of significant value for organizations. The framework developed will help executives understand which organizational capabilities are required in order to make process ownership work, which factors should be considered when appointing process owners and monitoring their work, and not least, which actions to undertake as a leader. Process owners can use the findings to improve their own practices and performance.

2. THEORETICAL BACKGROUND

'Someone needs to take responsibility and control’ (Armistead, et al., 1999:105)

Business process management aims to optimize customer value by managing business processes and performance (Smart, et al., 2009). Researchers have defined BPM as a three-dimensional construct consisting of process control, incremental process improvement and radical process change (Ng, et al., 2015). The objective of process management is to ensure current and future process success. Process success can be considered in terms of the performance of the process (consistency, reliability and reduction of errors), the efficiency of the process (time and costs), the flexibility of the process (allowing for rapid changes), the quality of the output of the process and customer satisfaction (Işik et al., 2013; Thompson et al., 2009). Process management should be a continuous practice and requires a holistic scope and institutionalization of process thinking in the organization (vom Brocke, et al., 2014). Effective business process management rests on six core elements that each represents a capability area and a critical success factor for BPM, and that together form a holistic model of BPM (De Bruin & Rosemann, 2005; Rosemann et al., 2011; Rosemann & vom Brocke, 2010). These core elements are strategic alignment between BPM and the overall organizational strategy, governance - the definition of roles, responsibilities, decision-making processes and
reward processes related to BPM, methods and techniques supporting BPM practices such as process documentation and process improvement; information technology - process-aware information systems, people - the BPM-related capabilities of the organizational members, and culture – the organizational values and beliefs supporting BPM.

Defining process owners, with ‘end-to-end authority for a process, responsible for ensuring consistently high performance’ (Hammer, 2002:27), is a central element of BPM governance. Several studies have validated the appointment of process owners as a fundamental dimension of BPM and process orientation (Chen, et al., 2009; Iden & Eikebrokk, 2014a; Kohlbacher & Gruenwald, 2011a; Smart, et al., 2009). The process owner role is an important means of institutionalizing BPM in the organization (vom Brocke, et al., 2014) and has been called a ‘living embodiment of a company’s commitment to its processes’ (Hammer & Stanton, 1999:111). Process owner responsibilities may vary, but the key contribution of a process owner involves ensuring process control and required process change. A process owner has important leadership and managerial responsibilities for setting targets, developing performance measures and monitoring process performance (Hertz, et al., 2001; Parkes & Davern, 2011; Sinclair & Zairi, 1995), and for leading a process team (Elzinga, et al., 1995; Rahimi, et al., 2016). Process owners are instrumental in incremental and radical process change (Hammer & Stanton, 1999; Kohlbacher & Reijers, 2013; Ongaro, 2004), as to detecting the need for and opportunities for change (Elzinga, et al., 1995; Vanhaverbeke & Torremans, 1999), prioritizing change suggestions (McLaughlin, 2010) and initiating, supporting or leading change projects (Balaji, et al., 2011; Palmberg & Garvare, 2006; Siemieniuch & Sinclair, 2002). As a change agent, the process owner must promote process changes, motivate for process compliance (Parkes & Davern, 2011; Siemieniuch & Sinclair, 2002) and work on creating process awareness in the organization (Balzarova, et al., 2004). In order to ensure current and future process success through process control and change, process owners must identify customer requirements (Vanhaverbeke & Torremans, 1999) and represent customer interests (Hammer & Stanton, 1999; Palmberg & Garvare, 2006). Process owners should ensure alignment between process performance and development and the organization’s overall strategy (Rahimi, et al., 2016), and work on the interfaces between processes (Armistead, 1996; Smart, et al., 2009). Therefore, it remains vital for a process owner to collaborate and maintain a strong relationship with other stakeholders, in particular executives, functional unit heads and other process owners (Amiruddin, et al., 2013; Hammer & Stanton, 1999; Nesheim, 2011). Additional operational
tasks for a process owner include process standardization and documentation (Nesheim, 2011; Reijers & Peeters, 2010), sometimes delegated to a subordinate process manager (Iden, 2012).

Organizations frequently organize processes horizontally across functional units in an organizational matrix (Hellström & Eriksson, 2008; Vanhaverbeke & Torremans, 1999; Zucchi & Edwards, 1999). Matrix structures are characterized by an overlay of ‘some kind of lateral authority, influence or communication’ (Larson & Gobeli, 1987:126) across traditional vertical units and ‘dual lines of authority, responsibility, and accountability that violate the traditional ‘one-boss’ principle of management’ (Ford & Randolph, 1992:269). A matrix structure with processes as horizontal units establishes an end-to-end perspective and management of processes, focusing on the entire value creation and the customers’ needs; whereas a single functional unit might not necessarily know, prioritize or be able to influence the process beyond the functional unit’s boundaries and might not have a sufficient customer orientation. Alternative organizational structures, such as a purely process-based organization, entail a need for more radical reorganization, involve a need to duplicate functional competence in different process units and would still not remove the need for coordination across units (Markus & Jacobson, 2010). Organizing processes within a matrix structure thus serves as a compromise (Larson & Gobeli, 1987) and entails certain benefits compared to the alternatives. However, the matrix structure also risks leading to conflicts between the functional organization and the process organization (Hammer & Stanton, 1999; Smart, et al., 2009) and can pose difficulties for the process owner to achieve process compliance and process change. The two levels of the matrix might have conflicting interests and priorities (Ford & Randolph, 1992; Siemieniuch & Sinclair, 2002), and process owners operating within a matrix often experience that their role is unclear and that the real power and control of resources belong to the functional units (Hammer & Stanton, 1999; Nesheim, 2011). The dual role of process owners in supporting and controlling the work performed in the functional units creates tension between the two layers (Nesheim, 2011). Leading cross-functional teams involves integrating work across the functional units and leading people who might not necessarily be accustomed to working together and might have conflicting priorities and allegiances and varying motivation. Further, as process ownership is often not defined as a full-time job, process owners might experience a lack of time, and other responsibilities might seem more important to prioritize, particularly if process awareness in the organization is low and executives fail to signalize that process management is a priority (Iden, 2012).
Extant research has identified a few success factors for process owners, including end-to-end authority, leadership skills and experience (Kohlbacher & Gruenwald, 2011a; Ongaro, 2004), credibility (Parkes & Davern, 2011), influence in the organization (Hammer & Stanton, 1999; Kohlbacher & Gruenwald, 2011a), and interpersonal and communication skills (Nesheim, 2011; Nilsson & Sandoff, 2015). Successful functioning of the matrix requires effort from executives and process owners to build a climate of trust and dialogue between the two dimensions (Nesheim, 2011; Palmberg & Garvare, 2006) and an organizational culture marked by values that support BPM (Schmiedel, et al., 2014; Siemieniuch & Sinclair, 2002). Necessary competence for a process owner includes insight into the organization, its customers and competitive environment (Ongaro, 2004) and technical process management skills (Harkness, et al., 1996; Ongaro, 2004). Process owners need time to fulfill the job (Iden, 2012; Lee & Dale, 1998), and support from executives (Ongaro, 2004).

Research has informed us about process owners’ contribution and responsibilities, and the challenges they face, but less about what effective process ownership requires. In general, research focusing on process owners remains scarce (Reijers & Peeters, 2010). Even though some studies mention success factors for process owners, no overall framework exists, and we do not know whether these success factors are the most important. For instance, in a study of the competencies required for project managers (another cross-functional position), Brill et al. (2006) identified 78 competencies, out of which the study confirmed 42 as ranging very important to extremely important to project manager success. For process ownership, no equivalent studies exist. This study aims to fill this gap: to identify and build a framework of the most important factors contributing to process owner success.

3. METHODOLOGY AND RESULTS

The research question is addressed through a Delphi study with international experts. A Delphi study is classically ‘a method used to obtain the most reliable consensus of opinion of a group of experts (…) by a series of intensive questionnaires interspersed with controlled feedback’ (Dalkey & Helmer, 1963:458), said to be particularly suited for exploring ‘questions of high uncertainty and speculation’ (Okoli & Pawlowski, 2004:5) which can ‘benefit from subjective judgments on a collective basis (Linstone & Turoff, 1975:4). The Delphi method seems particularly suited for addressing the research question as extant research has not identified many success factors for process owners, and the Delphi method permits identification and ranking of factors through several iterations. In addition, the Delphi method is an efficient way
of organizing expert panels without the panel members having to meet face-to-face (Linstone & Turoff, 1975). Delphi studies are commonly employed in information systems (IS) research, and within the field of BPM (e.g. De Bruin & Rosemann, 2005; Iden & Langeland, 2010; Schmiedel, et al., 2013a).

3.1 The Delphi procedure

The Delphi study was initiated in October 2015 and completed in January 2016. The study adhered to the characteristics described by Rowe and Wright (2001): iteration, controlled feedback to the panelists, statistical aggregation of replies and anonymity. Based on Schmidt’s (1997) recommendation, the study was organized into three phases: an initial brainstorming phase, in which experts were asked to identify success factors for process owners; a reduction phase, in which the experts aimed to reduce a long list of factors to a manageable number, and a ranking phase, in which the experts ranked the factors according to importance. Only the researcher knew the experts’ identities. All communication went through the researcher. Anonymity alleviates the panelists’ possible hesitation at making publicly known their initial judgment, as well as amendments in later phases, it discounts any personal issues between experts and reduces the risk of an expert dominating others by virtue of his/her personality or reputation (de Meyrick, 2003).

3.2 Expert panels

An expert panel in a Delphi study has been defined as a ‘group of knowledgeable people: those who can provide relevant input to the process, have the highest authority possible, and are committed and interested’ (Gutierrez, 1989:33). The researcher considered that two groups would likely have valuable insight into process-oriented organizations and the work and challenges of process owners: BPM academics and BPM practitioners. As these two groups might have different perspectives, the researcher established two panels (Okoli & Pawlowski, 2004). Following Okoli and Pawlowski’s (2004) recommendations, the goal was to include 10–18 experts in each panel.

Experts for the academic panel (AP) were identified through a literature review of leadership within BPM and through perusal of Google Scholar profiles that listed BPM as a main research area. Inclusion in the academic panel required completion of a relevant Ph.D., a position related to an academic institution and academic publications within BPM. Sixty academics from 24 countries were invited to join the panel. Seventeen academics (28 % of the invitees) accepted
the invitation (one dropped out after the first phase, while 16 participated in all three phases). Nine experts hold the position of professor, four of associate professor, two of assistant professor and two of senior researcher/senior lecturer.

Experts for the practitioner panel (PP) were identified based on publications within BPM, contributions to BPM conferences, articles and information on known BPM sites, such as BPTrends and Association of Business Process Management Professionals (ABPMP.org), and searches in LinkedIn and LinkedIn communities, such as BPTrends and BP Guru. A minimum of five years’ experience with BPM was required, as a process owner, as a BPM consultant or in another BPM-related position. Fifty-one practitioners from 27 countries were invited to join the panel. Twenty-two experts (43% of the invitees) provided input in the first phase of the study. Four later dropped out due to time constraints, while 18 practitioners participated in all three phases. The majority of the PP experts are BPM consultants, although the panel included process owners, BPM directors and others. The average number of years of relevant experience was 15, and 60% of the experts had more than 15 years’ experience within BPM. Eleven experts had published books within the field and/or contributed to BPM anthologies. Three experts hold a relevant Ph.D.

A wide geographic dispersion was sought for both panels. In total, the expert panels included representatives of 23 countries on five continents (see Table 1).

<table>
<thead>
<tr>
<th>Country</th>
<th>Academics</th>
<th>Practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Belgium</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Canada</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Egypt</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Estonia</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Germany</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Iceland</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Iran</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Liechtenstein</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Norway</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Poland</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Portugal</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
Table 1 Overview of countries represented in the expert panels

<table>
<thead>
<tr>
<th>Country</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Romania</td>
<td>1</td>
</tr>
<tr>
<td>Slovenia</td>
<td>1</td>
</tr>
<tr>
<td>South Africa</td>
<td>1</td>
</tr>
<tr>
<td>Spain</td>
<td>1</td>
</tr>
<tr>
<td>Sweden</td>
<td>2</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>2</td>
</tr>
<tr>
<td>United States</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

3.3. Data collection

3.3.1 Brainstorming (phase 1)

The experts received the first question together with the invitation to join the panel and information on the study and the procedure. The experts were requested to submit six success factors for process owners (described as factors essential to the process owner’s possibility of performing the job effectively and contributing optimally to the success of the process and the organization) and to provide a brief explanation of each factor. The researcher provided the experts with a simple Excel spreadsheet to fill out and return by email.

The brainstorming phase resulted in a list of 252 items. The researcher worked with another academic with substantial experience within BPM research and practice to reduce the number of items by consolidating items with identical, similar or overlapping meaning. The two researchers worked independently on consolidating items and then compared and discussed the lists, concluding with a list of 65 consolidated items. The brainstorming phase was concluded with a validation round, in which the researcher emailed the consolidated list to the experts and asked them to validate that their input had been adequately incorporated. Most responses were affirmative, although feedback from five experts resulted in the inclusion of 10 new items. Thus, 75 items (see Appendix A) formed the basis of Phase 2.

3.3.2 Reduction (phase 2)

In the second phase of the study, the researcher asked the experts to select from the list of 75 factors the 10 factors they considered most important. They selected the factors through a web survey with a randomized list of items. The purpose of this phase was to reduce the factors to a number that would be possible to rank. Based on Schmidt’s (1997) suggestion that a list of
about 20 items is an appropriate outcome of the reduction phase, the aim was to retain the approximately 20 items selected by the highest number of experts in the respective panel. All items with the same score were included in the expert panel’s reduced list. In the brainstorming phase, input from the two expert panels was handled collectively, but in Phase 2, the results from the two panels were handled separately. The outcome of the reduction phase was reduced lists of 24 items selected by the academic panel and 22 items by the practitioner panel. In total, 32 of the 75 items from the consolidated list were included in one or both reduced lists (14 items were selected by both panels; 18 items by only one of the panels).

3.3.3 Ranking (phase 3)
In the final phase, the researcher asked experts to rank the items in the reduced list of their respective panel according to importance (1 = the item considered most important for process owner effectiveness; 24 (AP)/22 (PP) = the least important item). Ties were not permitted. Again, a web survey with a randomized list of items was employed. Consensus was measured by calculating the Kendall coefficient of concordance (Kendall’s W) for each panel and evaluating the results in accordance with Schmidt’s (1997) recommendations. Kendall’s W was calculated to be 0.17 (AP)/0.12 (PP). According to Schmidt (1997), this should be interpreted as very weak agreement by both panels, and consequently a new ranking round should be conducted.

In the second ranking round, experts received information on the ranked list of items, the expert’s initial ranking of each item, the average ranking of each item and the percentage of respondents placing each item in the top half of the list, following Schmidt’s (1997) recommendations. In a new web survey, experts were asked either to provide a revised ranking or to confirm the initial ranking. In total, 16 experts revised their ranking, while 18 experts upheld the ranking from the first round. Though the second ranking round resulted in increased consensus for both panels (Table 2), consensus should still be interpreted as weak (AP)/very weak (PP). Schmidt (1997) recommended additional rounds until strong consensus (Kendall’s W: 0.7) is obtained or until progress in consensus is halted. However, the question at this stage was whether it would be realistic to achieve higher consensus in subsequent rounds. More than half of the experts repeated their initial ranking in the second ranking round. Among the experts who revised their ranking, consensus was calculated to be 0.7 (AP)/0.73 (PP). This implies that there would be little to gain from asking these experts to revise their ranking once more. An increase in consensus, thus, would require that the experts who upheld their initial ranking
should be willing to reconsider. As the results from the second ranking round were not dramatically different from the first ranking round, it seemed doubtful that these results should alter experts’ decision to repeat the ranking. The second ranking round had involved more time and more reminders than the first ranking. One might suggest that those who upheld their ranking had particularly strong viewpoints from the start and/or did not find it worthwhile to reconsider the ranking.

<table>
<thead>
<tr>
<th></th>
<th>Number of experts who revised ranking</th>
<th>Number of experts who repeated the initial ranking</th>
<th>Kendall’s W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Panel</td>
<td>10</td>
<td>6</td>
<td>0.37</td>
</tr>
<tr>
<td>Practitioner Panel</td>
<td>6</td>
<td>12</td>
<td>0.25</td>
</tr>
</tbody>
</table>

*Table 2 Ranking round 2*

The relatively even mean rankings of many of the items indicated that the ranking in itself might not be as relevant as the researcher had expected from the beginning of the study. Several experts supported this idea, by expressing that many of the factors were equally important: “it’s not a matter of ranking those parameters, because they are all relevant and important. All at the same level: tie for me is permitted” (PP expert). It might not be relevant whether an item is the fifth or sixth or the 10th or 14th most important success factor, but to agree on a set of the most critical success factors. Based on the conclusion that it was not realistic that a new ranking round would result in a significant increase in consensus and on the comments from experts that many success factors should be considered equally important, the researcher decided to stop the ranking after the second ranking round.

### 3.4 Results

Schmidt (1997) suggested that the percentage of experts who rank an item in the top half of their list provides valuable information. On this basis, and instead of taking an absolute ranking as a point of departure, the final list of the most important success factors is based on the percentage of experts ranking the item in the top half of their list, as an indicator of which success factors are highly emphasized. In the academic panel, where the reduced list from Phase 2 comprised 24 factors, the top half of an expert’s list included factors awarded the score of 1–12. In the practitioner panel, based on a reduced list of 22 factors, the top half of an expert’s list included factors awarded a score of 1–11. Based on the count of experts ranking an item in the
top half of their lists, the third phase concluded with a set of 20 factors deemed most important for successful process ownership:

- 13 factors included in the reduced lists of both expert panels in the reduction phase, and where a minimum of 30% of all the experts ranked the item in the top half of their list in ranking round 2; and
- 7 items included in the reduced list of only one expert panel in the reduction phase, but where a minimum of 50% of the experts of the panel ranked the item in the top half of their list in ranking round 2.

The success factors not included in the final list were emphasized by less than 30% of the experts (ranked in the bottom half of the list by at least 70% of the experts) and thus must be seen as factors of less importance than the ones included in the list.

Table 3 presents an overview of the 20 most important success factors for process owners, the percentage of experts who placed each factor in the top half of their list (displayed for each expert panel and for both panels combined) and comments from the experts in the brainstorming phase justifying the success factor’s importance. The list is not ranked, but percentages nevertheless indicate the relative importance of the success factors. The percentage of experts who placed items in the top half of their lists show six factors that clearly stand out as critical:

- The process owner (PO) has strong senior management support
- The PO has a mandate giving the PO end-to-end process authority
- The PO understands customers’ needs, requirements and expectations
- The PO is able to set process goals and monitor process performance
- The PO has a BPM mindset characterized by customer orientation, excellence, responsibility and teamwork
- The organizational culture is in favor of business process management and process ownership

More than 60% of all the experts in the study expressed through their ranking that these items belong in the top half of the list. The first of these items (senior management support), was ranked in the top half by almost 90% of the experts and the following two items by almost 80% (see Table 3).
Table 3 The 20 most important success factors for process owners, based on the percentage of experts who ranked the factors in the top half of their list

<table>
<thead>
<tr>
<th>Item</th>
<th>AP</th>
<th>PP</th>
<th>Total</th>
<th>Experts’ comments in the brainstorming phase</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Items emphasized by both expert panels</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| The PO has strong senior management support                        | 75% | 100%| 88%   | ‘Conflicts are bound to arise in cross-functional processes. Thus, the senior management should always clearly support the POs and give them mandate to make changes where necessary.’ (AP expert)  
‘If you don’t have senior management support, then none of the other things matter; the job, responsibilities and authority of the process owner need to be very clearly communicated and reinforced from senior management down.’ (PP expert) |
| The PO has a mandate giving the PO end-to-end process authority     | 94% | 67% | 79%   | ‘The process owner must have a formal and recognized mandate to change, improve and manage the process, otherwise, he is only a figurehead and operations are not executed as designed.’ (PP expert)                                                                 |
| The PO understands customers’ needs, requirements and expectations  | 81% | 78% | 79%   | ‘The process owner must be able to view the process from the ‘customer’s’ perspective (whether the customer is external or internal). This is so they can articulate clearly what is an effective process from the customer’s perspective and monitor performance accordingly. It is also necessary to be able to communicate this understanding to other parties involved in the process so they can develop an appreciation of the purpose and end consequences of their activities.’ (AP expert) |
| The PO is able to set process goals and monitor process performance  | 81% | 67% | 74%   | ‘We are not trying to manage the process as such but to achieve and improve the performance. The key is to know what matters the most and how to measure the performance and results and how to gather relevant information for purposes of daily management and action, analysis, improvement, rewarding and decision-making.’ (PP expert) |
| The PO has a BPM mindset characterized by customer orientation, excellence, responsibility and teamwork | 75% | 72% | 74%   | ‘BPM values as a mindset, e.g., Schmiedel et al. (2013a).’ (AP expert)                                                                                                               |
| The organizational culture is in favor of business process management and process ownership | 44% | 78% | 62%   | ‘In my view, culture is THE decisive element for process owner effectiveness on an organizational level; it includes various culture values (CERT values): Customer orientation (internal and external), Excellence (improvement and innovation), Responsibility (commitment and accountability), cross-functional Teamwork (formal and informal).’ (AP expert) |
| The PO has access to sufficient organizational resources (budget and staff) | 81% | 28% | 53%   | ‘Resources to manage and improve processes.’ (AP expert)                                                                                                                  |
| The PO has access to process performance metrics of high quality and uses them effectively | 63 % 44 % 53 % | ‘If process performance is not effectively measured and reported, it is not possible to be an effective PO.’ (PP expert) |
| The PO has support from line-managers | 69 % 28 % 47 % | ‘In the case where the process owner does not have direct subordinates, the question is, do the line managers listen to him/her. This has something to do with social ranking, relationship building and role definitions. It is not enough that line managers listen; they need also let their best people to use their time on the improvement work and process owner should have budget to acquire other services such as ICT, expert help or needed equipment.’ (PP expert) |
| Process management is integrated with the other management systems in the firm | 25 % 56 % 41 % | ‘Many organizations may have rather fragmented management system such as quality assurance, occupational, wellbeing, knowledge, rewarding, safety, health care, environmental, reporting, access control, financial control systems. The key issues is how to integrate all these different systems in value creation, daily management and action.’ (PP expert) |
| The organization has a process governance structure | 6 % 67 % 38 % | ‘The process owner is part of the process governance structure and is supported by this structure and coaching/training; and is part of a group of process owners who can share experiences and learnings.’ (AP expert). ‘Process owners can only be successful if process governance is clearly defined, including the relation to functional units; in case of conflicts clear escalation paths need to be in place to avoid dead lock situations.’ (AP expert) |
| The PO has strong leadership skills | 44 % 28 % 35 % | ‘Formulating vision and driving change, link process to strategy, promote customer focus, advocate the outside-in view.’ (PP expert) ‘The process owner has to inspire and motivate the teams to participate on the management of the process and also in the changes required for the process.’ (PP expert) ‘POs are most likely to work with functional heads or process workers from several different departments. It is their role to ensure all these people are working towards achieving the same goal. Thus leadership capabilities are critical.’ (AP expert) ‘The process owner must possess leadership skills, such as being a motivator and a communicator, and he/she must be able to lead a team of cross-organizational process roles.’ (AP expert) ‘Formulate a vision and drive change, link process to strategy, promote customer focus, advocate the outside-in view.’ (PP expert) |
| The organization has a BPM strategy aligned with the overall strategy | 31 % 33 % 32 % | ‘From an organizational perspective we should ultimately be looking at value creation delivered through people and work processes, enabled by leadership, clear business objectives and targets and Continuous Improvement - built on a foundation of IT systems and Data.’ (PP expert) |
| Items emphasized by academics | AP | 'Has great understanding of the process he owns, its tasks, interfaces, performance, requirements etc.' (PP expert) |
|------------------------------|----|'The process owner must deeply understand the process in order to quickly detect and understand where the pain points are and how they can be addressed.' (AP expert) |
| The PO has in-depth knowledge about his/her process | 81 % | 'The process owner needs to master a wide range of methods and tools for process analysis, redesign and improvement.' (AP expert) |
| The PO is skilled in methods, techniques and tools for process analysis, redesign and improvement | 69 % | 'The process owner must understand what BPM is, what are the objectives and expected deliverables of BPM, how BPM may support the organization’s strategies.' (PP expert) |
| The PO has a high BPM competence | 56 % | 'The process owner needs to strongly believe in the power of process thinking and be able to transmit this belief to others.' (AP expert) |
| The organization understands and accepts the role of the PO | 50 % | 'The rest of the organization should also recognize the value of BPM and having process owners.' (AP expert) |
| Items emphasized by practitioners | PP | 'As a process owner, you should not focus on one aspect only (e.g., just people, just process or, very important, just technology) but seek a healthy balance.' (PP expert) |
| The PO embraces BPM as a holistic management approach | 61 % | 'The process owner needs to strongly believe in the power of process thinking and be able to transmit this belief to others.' (AP expert) |
| The PO has authority and capability to reach out to business partners for any issues regarding cross-organizational process ownership | 61 % | (no comment) |
| The PO is well-informed about business goals and strategies | 56 % | 'The PO must understand the strategic direction and imperatives of the business he is in.' (PP expert) |
4. DISCUSSION AND IMPLICATIONS

4.1 A framework of necessary capabilities for effective process ownership

Results were coded and analyzed in accordance with the core elements of BPM (Rosemann & vom Brocke, 2010). Situating the success factors within the core elements enables the construction of a framework where each success factor represents a capability (Table 4). The left side of the framework includes success factors that reflect the organizational support and perception of BPM, and covers the core elements of strategic alignment, governance, methods and culture. The right side of the framework represents required process owner capabilities; hard capabilities (Rosemann, et al., 2011) which relate to the core element people, as well as soft capabilities related to the process owners’ mindset and perception of BPM, and thus belonging to the core element culture. None of the most important success factors identified through this study relate to the sixth core element of information technology supporting BPM.

<table>
<thead>
<tr>
<th>Organizational capabilities</th>
<th>Process owner capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategic alignment</strong></td>
<td><strong>People</strong></td>
</tr>
<tr>
<td>BPM strategy aligned with the overall strategy</td>
<td>Understanding of customer’s needs, requirements and expectations</td>
</tr>
<tr>
<td>Process performance metrics of high quality</td>
<td>Technical skills related to setting process goals and monitoring process performance, process analysis, redesign and improvement</td>
</tr>
<tr>
<td><strong>Governance</strong></td>
<td><strong>BPM competence</strong></td>
</tr>
<tr>
<td>Mandate giving the PO end-to-end process authority, and - in the case of cross-organizational process ownership - authority and capability to reach out to business partners for any issues</td>
<td>In-depth knowledge about the process</td>
</tr>
<tr>
<td>Process governance structure</td>
<td>Understanding of business goals and strategies</td>
</tr>
<tr>
<td><strong>Methods</strong></td>
<td><strong>Leadership skills</strong></td>
</tr>
<tr>
<td>Integration between BPM and other management systems in the organization</td>
<td>Communication skills</td>
</tr>
<tr>
<td><strong>Culture</strong></td>
<td><strong>Interpersonal skills</strong></td>
</tr>
<tr>
<td>Strong top management support</td>
<td>Leadership skills</td>
</tr>
<tr>
<td>Organizational culture in favor of BPM and process ownership</td>
<td>Communication skills</td>
</tr>
<tr>
<td>Understanding and acceptance of the role of the PO</td>
<td>Leadership skills</td>
</tr>
<tr>
<td>Access to sufficient organizational resources (budget, and staff)</td>
<td>Process owners have a BPM-mindset characterized by customer orientation, excellence, responsibility and teamwork</td>
</tr>
<tr>
<td>Support from line-managers</td>
<td>Process owners embrace BPM as a holistic management approach</td>
</tr>
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Table 4 The most important capabilities representing key success factors for process owners
4.1.1 Strategic alignment

Two of the success factors, a BPM strategy aligned with the overall strategy and process performance metrics of high quality, relate to the core area of strategic alignment—the first factor attributed to the ‘bidirectional linkage between strategy and business processes’ (Rosemann & vom Brocke, 2010:114) and the second to monitoring process performance and measuring performance toward strategic objectives. For a process owner, these factors are important means of ensuring that process design, realization and development are done in accordance with the organization’s overall strategy, and that the process contributes to the organization’s success. Alignment of the BPM strategy with the overall strategy of the organization also provides a certain legitimation for process units and process owners, which can be beneficial in potential conflicts within the matrix—a reasoning for why a change might be necessary or why the process requires certain resources. Process performance metrics are an important enabler for the process owner monitoring the process and striving toward strategic goals and may work to motivate the process owner and process employees to increase their effort. Process owners can employ performance indicators strategically to promote compliance with process design and the need for change (Škrinjar & Trkman, 2013). The importance of performance measurement is supported by previous research showing that process ownership and process performance measurement must be combined in order to impact financial performance (Kohlbacher & Gruenwald, 2011b) – ‘any discussion of accountability is meaningless in the absence of performance measures’ (Spanyi, 2010:234).

4.1.2 BPM governance

The purpose of BPM governance is to establish accountability and clear roles. A process governance structure and a supportive and recognized mandate giving the PO end-to-end process authority are vital for the scope of the process owner’s responsibilities and authority to be known to the process owner and the organization. Contrary to research advocating appointing process owners among executives to strengthen the process owner’s influence in the organization (e.g. Hammer & Stanton, 1999; Hertz, et al., 2001), neither expert panel emphasized items suggested in the brainstorming phase related to the process owner’s formal position in the hierarchical organization. However, a mandate helps organizations avoid “functional kingdoms,” where “the process owner is just a tick in a box” (PP expert) and the real authority remains with functional leaders. This is provided that the mandate establishes end-to-end (cross-unit) authority over the process and that the organization is familiar with and adheres to the mandate. In the case of cross-organizational process ownership, the mandate
must include *authority to reach out to business partners*. The process owner mandate is naturally linked to an established process governance structure (Braganza & Lambert, 2000) but singled out as a particularly important factor. The process governance structure may also include other roles supporting the process owner (Antonucci & Goeke, 2011; Lohmann & Zur Muehlen, 2015), as well as process owner councils permitting collaboration and integration between business processes and functioning as a “learning network” for process owners (Ramcharamdas, 1994:36), further enhancing their understanding of the organization and of best practices.

4.1.3 Methods

The core element of *methods* involves ‘approaches and techniques that support and enable consistent process actions’ (Rosemann, et al., 2011:324). The results from this study emphasized *integration between BPM and other management systems in the firm*, in order to ensure consistency: ‘The key issue is how to integrate all these different systems in value creation, daily management and action’ (PP expert). Together with several other success factors (‘The organizational culture is in favor of business process management and process ownership’, ‘The organization has a process governance structure’, ‘The organization has a BPM strategy aligned with the overall strategy’, and ‘The PO embraces BPM as a holistic management approach’), this factor supports the need for a holistic and institutionalized BPM in the organization (vom Brocke, et al., 2014).

4.1.4 Culture

Organizational capabilities related to *culture* primarily involve the capability of executives to support process owners and to build an organizational culture in favor of BPM and process ownership. *Senior management support* strengthens the process owner’s authority and impact in the organization and empowers the process owner to influence decisions and investments, drive through changes, achieve process compliance and handle conflicts in cross-functional processes. One expert claimed that ‘if you don’t have senior management support, then none of the other things matter.’ This finding is consistent with several studies emphasizing the importance of executive support regarding BPM (e.g. Bai & Sarkis, 2013; Niehaves et al., 2014; Parkes & Davern, 2011; Trkman, 2010). Extant research has defined an organizational culture supporting BPM as characterized by *customer orientation, excellence, responsibility* and *teamwork* (Schmiedel, et al., 2013a; Schmiedel et al., 2013b). A supportive organizational culture facilitates the process owner’s job. Accomplishing process compliance, change and
success is much harder in organizations and processes where employees do not focus on customer needs, do not take responsibility and strive for excellence through continuous improvement, and do not collaborate as a team. Senior management support and an appropriate organizational culture may also influence other organizational capabilities positively, such as organizational understanding and acceptance of the role of the process owner and support from line-managers. Further, senior management support has been found to be directly linked to the distribution of resources within the matrix (Belassi & Tukel, 1996). Process owner capabilities related to culture entail a mindset in accordance with the desired values mentioned above and a holistic perspective of BPM.

4.1.5 People
Whereas the core element of culture covers soft capabilities related to values and perception, the core element of people includes hard capabilities related to process owners’ knowledge and skillset. Understanding customer’s needs, requirements and expectations must be seen as a prerequisite for the process owner’s ability to represent the customer (Hammer & Stanton, 1999; Palmberg & Garvare, 2006), detect the need for process change (Vanhaverbeke & Torremans, 1999) and move the process in the right direction. In this context, the customer should be understood as current and potential future customers (Rosemann, 2014). Technical skills related to setting process goals and monitoring process performance, process analysis, redesign and improvement, and more general BPM competence (‘understanding what BPM is; the objectives and expected deliverables of BPM, how BPM may support the organization’s strategies’ (PP expert)) are important as they enable process owners to carry out responsibilities related to process control and change. This finding is supported by Harkness et al. (1996) and Ongaro (2004). Technical skills, however, were not highly emphasized by the practitioner panel, perhaps because many organizations appoint process consultants or process analysts to support the process owner (Lohmann & Zur Muehlen, 2015).

Experts emphasized the need for in-depth knowledge about the process, including its tasks, performance, contribution to the strategic objective of the organization, and interrelation with other processes. Such knowledge permits quickly ‘detecting and understanding where the pain points are and how they can be addressed’ (AP expert) and ‘developing a shared understanding with those carrying out the activities of the process’ (AP expert). Moreover, experts pointed to the need for a process owner to understand business goals and strategies. Whereas a functional leader has responsibilities directly linked to the operations and human resources of one
department, process owners are accountable for processes that cross different units. Monitoring, controlling and developing processes thus require insight into the operations, resources and challenges of more than one department. Further, holistic management of business processes requires an understanding of other parts of the organization (other processes or functional units), and the interrelations between these, in order to avoid sub-optimization (Siemieniuch & Sinclair, 2002). Also effective process ownership requires an understanding of the overall objectives of the organization, in order to ensure that the process follows the organization’s strategic objectives.

A well-known definition of leadership is ‘the process of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives’ (Yukl, 2010:8). The process owner’s leadership role includes involving and orienting stakeholders, employing indicators strategically, working on ingraining customer orientation in the organizational culture, engaging in political work inside the organization and constantly negotiating, promoting the process and selling the ideas and benefits of process orientation and process change to employees and executives. For a process owner, the first part of Yukl’s definition seems central to persuade functional units to yield the necessary resources and of the benefits of process compliance as well as of process changes. The second part pertains to leading a process team and motivating process employees for working together toward process success. The process owner’s leadership skills are important to build trust between the two dimensions of the matrix (Nesheim, 2011; Palmberg & Garvare, 2006). These findings are supported by previous studies pointing to the importance of leadership skills for a process owner (Hertz et al.2007; Kohlbacher & Gruenwald, 2011a; Nesheim, 2011; Ongaro, 2004).

4.1.6 Inclusion of factors based on extant research

A large number of items proposed in the brainstorming phase regarded process owners’ personal skills and characteristics (see the appendix). After the reduction round, only six of these items remained, and leadership skills was the only item included in the final list. One might conclude that the personality and more generic skills and abilities of the process owner are important but not among the most critical success factors. However, previous studies have shown that process owner’s communication and interpersonal skills are highly important (Hammer & Stanton, 1999; Nesheim, 2011; Nilsson & Sandoff, 2015; Palmberg & Garvare, 2006). The large number of different personality traits, skills and abilities suggested in Phase 1
also substantiates the need for a focus on human aspects of business processes and BPM. In the brainstorming phase, communication/interpersonal skills were among the items most frequently suggested by the experts, who explained that ‘even with all the senior management support, process ownership is still a constant struggle to get and keep people on board’ (PP expert). Thus, it seems surprising that experts in subsequent phases did not emphasize these items. A possible explanation is that in the selection of a limited number of items, experts might have chosen to emphasize leadership skills as an overarching item seen as also encompassing communication and interpersonal skills. However, as previous studies have clearly pointed to communication and interpersonal skills as a success factor, it seems appropriate to include such skills as separate capabilities in the framework.

5. CONCLUSIONS
The main objective of this study was to advance our understanding of how organizations can make process ownership work. This global Delphi study with 34 experts from 23 countries identified 75 success factors, of which 20 were emphasized as the most critical capabilities. Although previous studies have identified a few success factors for process owners, this is the first study to conclude on an extensive list, determine a set of the most critical success factors and situate them within an overall framework, applying and extending the framework of core BPM elements and capabilities (Rosemann, et al., 2011). The findings extend the knowledge base of academics regarding process ownership and matrix organizations and inform the management of organizations.

In sum, the set of success factors for process owner success might be compared to a multifaceted construction where all the elements serve a purpose. The framework clearly demonstrates that making process ownership work hinges on a wide set of capabilities related to the organization and the process owner, and on a holistic scope of BPM in the organization (vom Brocke, et al., 2014). Results still indicate that some of the success factors seem more important than others; these are fundamental building blocks without which the whole construction might be in peril. The most critical success factors for effective process ownership are instrumental in facilitating the process owner’s role in process change, as well as process compliance and control (Ng, et al., 2015). Strong and visible executive support and a clear mandate providing end-to-end authority generate the invaluable asset of influence in the organization (Spanyi, 2006). Sufficient influence helps the process owner overcome organizational resistance and conflicts with functional units and thus achieve compliance and change. Detecting and promoting the
necessity for change requires access to adequate data on process performance, as well as an understanding of customers’ needs, requirements and expectations. Customer orientation and a BPM mindset let the process owner promote the same mindset and understanding in the organization, thus laying another important foundation for employee’s compliance with the process and process change.

Finally, it is worth questioning whether these success factors are sufficient for the future. In an economic climate where information technology and digitalization play a consistently larger role, it seems surprising that experts did not point to technological competence as a highly required capability for process owners. In the years to come, the need for a sufficient technological competence for a process owner is likely to become more prominent.

5.1 Implications for practice

The findings have significant practical implications for executives, as the findings offer a deeper comprehension of how to make process ownership and a matrix structure work effectively. Ultimately, making process management and process ownership work is a leadership responsibility, and thus demands that leaders want and dare to take steps for building adequate capabilities. Successful process management requires that executives establish process ownership (Kohlbacher & Gruenwald, 2011a; Niehaves, et al., 2013; Smart, et al., 2009) and are willing to back up the process owner, through a governance structure that includes a supportive mandate providing end-to-end authority, and directly through own actions, including providing sufficient resources for the process. Executive commitment requires that executives believe in the value of BPM (Herzog et al., 2007) and are ‘committed to employing a process focus to improve performance for both customers and shareholders’ (Spanyi, 2010:232-233).

Executives must thus have the right motives for appointing process owners, not merely to satisfy an external demand, for instance related to a certification (Iden, 2012). Further, executives should ensure strategic alignment (Hung, 2006; Škrinjar & Trkman, 2013) and ensure that process performance is measured (Niehaves, et al., 2013). An appropriate organizational culture might be developed by executives consciously working on establishing a culture with the right values (Palmberg & Garvare, 2006). Important process owner skills can be trained, and organizational insight acquired through time and experience. For a process owner, this study provides valuable insight into the necessary capabilities the process owner might need to expand on, for instance, furthering his/her understanding of customers, the process and the organizational context, and of effectively measuring process performance.
The results of this study give reason for optimism, as they indicate that process ownership effectiveness should be attainable for most organizations with the right focus and dedication, as the most important capabilities largely involve factors that organizations might influence.

5.2 Limitations

The weak consensus in the ranking phase might be seen as a limitation. However, the most critical success factors were emphasized by a large majority of the experts. Another possible limitation might be related to the consolidation of items in the first phase of the study, which entails a possibility that the researcher might subjectively influence the list of items. Asking the experts to validate the list of consolidated items, however, is an important means of ensuring that the researcher has understood and analyzed the data correctly. A large number of highly qualified experts from 23 countries in total and a low attrition rate throughout the study add to the validity of the research.

5.3 Suggestions for further research

The impact of contextual factors on BPM has been emphasized in recent research (vom Brocke, et al., 2016) and should be considered regarding process ownership, as contextual factors might influence which success factors would be most critical in a specific business context. Moreover, some experts suggested that the importance of each factor might vary according to the organization’s maturity level; while some factors might be imperative in a start-up phase or during major changes, other factors can be more important during other phases. Further research on this topic is required. Future studies might also employ other empirical research methods, such as surveys, to test the findings of this study. Likewise, in-depth studies might explore potential trade-offs between success factors.

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Appendix A: Complete list of factors included in the study (based on the consolidated list of items from the Brainstorming phase)

The twenty most important success factors (Phase 3):

- The PO has strong senior management support
- The PO has a mandate giving the PO end-to-end process authority
- The PO understands customer’s needs, requirements and expectations
- The PO is able to set process goals and monitor process performance
- The PO has a BPM mindset characterized by customer orientation, excellence, responsibility and teamwork
- The organizational culture is in favor of business process management and process ownership
- The PO has access to sufficient organizational resources (budget, and staff)
- The PO has access to process performance metrics of high quality and uses these effectively
- The PO has support from line-managers
- Process management is integrated with the other management systems in the firm
- The organization has a process governance structure
- The PO has strong leadership skills
- The organization has a BPM strategy aligned with the overall strategy
- The PO has in-depth knowledge about his/her process
- The PO is skilled in methods, techniques and tools for process analysis, redesign and improvement
- The PO has a high BPM competence
- The PO embraces BPM as a holistic management approach
- The organization understands and accepts the role of the PO
- The PO has authority and capability to reach out to business partners for any issues regarding cross-organizational process ownership
- The PO is well-informed about business goals and strategies

Other factors included in the reduced lists (Phase 2):

- The organization has a PO council with regular meetings
- The PO is a dedicated role, not an ad hoc or dual responsibility
- The PO has strong negotiation skills
- The PO has credibility
- The PO is a result oriented person
• The organizational structure is in favor of BPM and process ownership
• The PO has political influence within the company
• The PO is able to balance day to day delivery and continuous improvement in a consistent manner
• The organization has a reward system that relates to processes
• The PO understands how the organization’s processes interrelate
• The PO is able to collaboratively engage and persuade those who carry out the process
• A consultancy team or a BPM center of excellence supports the PO

Factors identified in the brainstorming phase (Phase 1), but not selected by expert panels in subsequent phases:

• The PO has strong communication skills
• The PO has strong interpersonal skills
• The PO shows commitment to the job
• The PO is a proactive person
• The PO is a visionary person
• The PO acts as a change agent
• The PO has patience and stamina
• The PO is pragmatic
• The PO has strong organizing skills
• The PO is a charismatic leader
• The PO is able to develop a shared understanding with those who carry out the process
• The PO has the ability of going from high level to details
• The PO has the ability of coping with complexity
• The PO has the ability of thinking statistically
• The PO has creative skills
• The PO has the ability to reflect on and be open about own mistakes
• The PO is open minded and improvement oriented
• The PO is skilled at effective time management
• The PO is skilled at systems thinking
• The PO is able to ensure mutual collaboration between the functional organization and the process- and technical experts
• The PO understands how the information architecture and ICT systems are aligned and integrated to the business processes
• The PO understands the industry, market and market trends
• The PO understands the people aspects of the organization
• The PO has personal authority
• The PO is a top executive
• The PO has a genuine interest in the process outcome
• The PO has a strong intrinsic motivation
• The PO has a clear role description
• The PO is involved in contract negotiations relevant to the process
• The PO role is nominated to persons at the “right” management level
• The PO role is defined as accountable for responding to process performance anomalies and opportunities rather than as responsible for process performance
• The PO has time to fulfill the role
• The PO is accountable for process outcome, end-to-end
• The PO is supported by an appropriate recognition and reward system
• The organization allows for a long-term focus
• The IT department supports business process management
• The different roles in the BPM organization are clearly defined
• The organization uses the term “Process Steward” instead of “Process Owner”, signifying that the whole process team is responsible for the process’ success
• The organization provides BPM training for the PO
• The technological platform in the organization has a high functional level, with a minimum of restrictions
• The organization uses IT as a lever to drive better business outcomes
• The organization has a decision support system
• The organization has a competency framework linked to the process framework
HOW CHIEF DIGITAL OFFICERS MANAGE THE TENSIONS OF DIGITAL TRANSFORMATION

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ABSTRACT

This study explores how chief digital officers (CDOs) understand and manage organizational tensions related to digital transformation. Through in-depth interviews with 20 CDOs from organizations in the process of digital transformation, we identify several organizational tensions. We analyze the CDOs perceptions of the tensions, and identify and discuss their strategies for managing these. We find that much of the CDOs perceptions are about *sensemaking*; i.e. interpreting and discussing the various tensions they experience in the organization. Second, we find that CDOs primarily take a discursive approach to managing these tensions, which we discuss under the term *sensegiving*.

**Keywords**
Digital transformation, organizational transformation, chief digital officers, CDOs, sensemaking, sensegiving, tensions.
1. INTRODUCTION

Digital technologies have had and continue to have a transformational impact on society, markets, customers and our everyday lives (Lucas Jr, et al., 2013). In order to compete and survive in an increasingly digital world, organizations must adapt and transform. Researchers and practitioners talk about a digital transformation (Matt, et al., 2015), which entails altering an organization’s business model or its constituents (products, services, processes, relationships, etc.) by the means of digital technologies (Fitzgerald, et al., 2014; Nwankpa & Roumani, 2016). Digital transformation is a rich and complex phenomenon:

- It requires a new approach to strategy, leveraging the particular attributes of digital technologies and the Internet (Bharadwaj, et al., 2013; Yeow, et al., 2018).
- It encompasses an organizational transformation (Besson & Rowe, 2012), including the management structure (Berghaus & Back, 2017), values and mindsets (Karimi & Walter, 2015) and culture (Hartl & Hess, 2017; Lucas & Goh, 2009).
- It is an ongoing process (Sia et al., 2016; Thorseng & Grisot, 2017), which evolves in a turbulent environment.

Research has shown that digital transformation is indeed challenging, with many failures (Davenport & Westerman, 2018). One important reason is that the process triggers a number of tensions in the organization, such as between a new digital strategy and the organization’s existing resources (Yeow, et al., 2018), and between emerging and existing approaches to digital innovation (Tumbas, et al., 2018).

Responding to challenges, many organisations have established a new position, the chief digital officer (CDO) (Haffke et al. 2016; Horlacher et al., 2016). Broadly, the main task of the CDO is to drive business value from digital technologies, and in contrast to the technological focus of the chief information officer (CIO), the CDO typically focuses on business innovation, analytics and customer engagement (Tumbas, et al., 2017). This article responds to a call for research on the managerial challenges and complexities related to digital transformation (Gregory, et al., 2015) and on the contribution of CDOs (Matt, et al., 2015).

Recently, Tumbas et al. (2018) studied how CDOs navigate tensions between emerging and existing approaches to digital innovation. They found that CDOs adopt three strategies to manage these tensions: grafting (aligning new initiatives closely to existing structures),
bridging (establishing links between existing functional units) and decoupling (separating and insulating new initiatives from the existing functional units).

The study of Tumbas et al. (2018) makes a valuable contribution to the role of the CDOs, and our study builds on these insights. However, while we agree that the tensions of digital transformation include tensions between the emerging and the existing, we believe that there are other intra-organizational tensions that need to be understood. Accordingly, as accomplishing digital transformation requires productively managing tensions (Gregory, et al., 2015), it is necessary to recognize organizational tensions and how CDOs contribute to managing these. Our research question is:

- How do CDOs understand and manage the tensions of digital transformation?

We take a discursive, social constructionist approach to organizations and organizational tensions, seeing organizational reality as constructed through language, discourse and interactions (Phillips & Oswick, 2012; Robichaud et al., 2004), and tensions as partly socially constructed (Smith & Lewis, 2011). We conducted 20 in-depth interviews with CDOs, which were carefully analyzed. We find that, although the CDOs do play active and driving roles in digital transformation, what best characterizes the CDOs’ perceptions of their work is dealing with tensions through sensemaking, a social process in which the purpose and meaning of digital transformation is constructed through discourse and interaction (Phillips & Oswick, 2012; Robichaud, et al., 2004). From this insight we identify the key role of the CDO as a sensegiver seeking to give meaning to the purpose and content of the transformation, and to construct a sense of organizational units as important and interrelated parts of a whole.

2. ORGANIZATIONAL TENSIONS AND SENSEMAKING

2.1 Tensions

Tension is defined as stress-inducing oppositions (Fairhurst & Putnam, 2018). Researchers have identified a number of organizational tensions, including tension between stability and change (e.g. Farjoun, 2010; Sutherland & Smith, 2011), exploration and exploitation (March, 1991), different organizational identities (Fiol, 2002), new capabilities and existing ones (Lüscher & Lewis, 2008), and self-interest and the collective good (Stoltzfus et al., 2011).
Organizational tensions are a fact of work life, and have been researched from different perspectives:

- Tensions can cause anxiety, power struggles, conflict and resistance obstructing necessary change (Gregory, et al., 2015; Lüscher & Lewis, 2008).
- Tensions can also be constructive (Kornberger et al., 2006), a source of learning and creativity (Oswick et al., 2000), and a driving force of organizational change and transformation (Cameron & Quinn, 1988; Lewis et al., 2014).
- To counteract the potential negative effects of oppositions and realize positive ones, organizational leaders must be conscious of, and continuously address and manage, tensions (Clegg, et al., 2002; Lewis, 2000). Rather than resolving the tensions, this involves coping with and even embracing them (Schad et al., 2016).

Tensions can be illuminated or amplified by a volatile environment, the use of technologies, and by change and transformation processes (Smith & Lewis, 2011). Since digital transformation impinges on all aspects of the organization, we can assume that it requires productively managing related tensions (Gregory, et al., 2015). We posit that digital transformation both amplifies existing and possibly latent tensions, and creates new ones.

Putnam et al (2016) identify diverging voices, discourses and interests as central drivers of organizational tensions. Such divergence typically emerges from sensemaking processes of groups and individuals – ‘as actors attempt to make sense of an increasingly intricate, ambiguous, and ever-changing world, they frequently simplify reality into polarized either/or distinctions that conceal complex interrelationships’ (Lewis, 2000:761). Researchers view sensemaking as a social and discursive process (Gephart Jr, 1993; Weick, 1995), where meaning is debated and co-constructed (Maitlis & Christianson, 2014). Sensemaking is often triggered by ambiguous events like crisis or change (Maitlis & Sonenshein, 2010). Such events can be big or small, planned or unplanned (Sandberg & Tsoukas, 2015). Sensemaking is not necessarily an objective process, as organizational actors or stakeholder groups may have various reasons for trying to guide organizational sensemaking in a certain direction.
2.2 Managing tensions

Research suggests that productively managing tensions requires adopting a perspective of duality towards tensions: seeing opposing poles not as competing or mutually exclusive (Seo, et al., 2004) but as interrelated parts of a whole, which complement, enable and inform each other (Farjoun, 2010, 2016). Within this perspective, strategies for managing tensions involve some kind of interaction and mutual adjustment between poles (Jarzabkowski, et al., 2013). Such strategies might draw upon discursive or rhetorical practices and sensegiving (Bednarek et al., 2017; Lüscher & Lewis, 2008; Putnam, et al., 2016).

Through sensegiving, organizational actors intentionally seek to influence the sensemaking of others (Gioia & Chittipeddi, 1991). Some organizational actors are more likely sensegivers, because their ‘voices are louder, more articulate or more powerful’ (Hazen, 1993:16). In particular, sensegiving is a key leadership capability (Maitlis, 2005). Often, sensegiving is performed in the form of establishing a dominant discourse or narrative, which does not eliminate opposing voices (Kornberger, et al., 2006), but can make it harder for these to be heard (Boje, 1995). In the sense that sensegiving can support strategies for managing tensions that involve suppressing one of the opposing poles, it can be perceived as negative and counterproductive (Humphreys & Brown, 2002). The power exercised by leaders engaging in sensegiving can however also be positive and productive, in line with Foucault’s (1980:119) notion of power:

If power were never anything but repressive, if it never did anything but say no, do you really think one could be brought to obey it? What makes power hold good, what makes it accepted, is simply the fact that it doesn’t only weigh on us as a force that says no, but that it traverses and produces things; it induces pleasures, forms knowledge, produces discourse.

Helping opposing poles make sense of the tension and of each other can contribute to the construction of a workable certainty that enables change (Lüscher & Lewis, 2008). Kornberger, Clegg et al. (2006) suggest that embracing tensions and divergent voices involves making an effort to understand the different voices of the organization and use discursive abilities to function as a ‘translator’, in order to bridge the gap between the voices. Likewise, Sullivan and McCarthy (2008:539) propose that leaders must facilitate communication, not with the aim of suppressing or unifying divergent voices, but of ensuring dialogue and of openly giving each voice “a place from which it is possible to reject it, learn from it and pragmatically change in response to it, as needed”. This requires forums and spaces where voices can be heard (Carter
et al., 2003), and a managerial mindset involving “critical reflection, openness and an intermingling with the truths of various stakeholders” (Sullivan & McCarthy, 2008:539).

3. CHIEF DIGITAL OFFICERS

Accomplishing a digital transformation requires an organizational understanding of the potential impact and requirements of information technology (IT), along with an ability to plan, manage and implement IT-enabled change founded on business needs. Executives must take steps to bring the organization on board (Lucas & Goh, 2009), as digital transformation relies on the involvement of the whole organization, and requires extensive collaboration between different units, not in the least between business units and IT (Gregory, et al., 2015; Peppard, 2018). A lack of cooperation between business units each undertaking their own digitalization projects represents one of the major challenges of digital transformation (Fitzgerald, et al., 2014). Due to the scope and complexity of changes, executives might establish governance and collaboration mechanisms to manage and coordinate the digital transformation (Chanias, 2017; Chianias & Hess, 2016; Horlacher et al., 2016). Such mechanisms include a digital strategy for the planning, coordination and implementation of digitalization projects (Matt, et al., 2015), and dedicated roles or units with a cross-functional focus (Chianias & Hess, 2016) – such as chief digital officers.

Establishing a CDO might be particularly important for organizations experiencing an urgent need for digitalization due to a harsh competitive environment, and for central coordination of digital transformation activities (Haffke, et al., 2016). Also, organizations might not perceive traditional IT departments and the CIO as sufficiently knowledgeable about business requirements, and might doubt their ability to promote new digital technologies and lead rapid and agile transformations (Chianias & Hess, 2016; Tumbas, et al., 2017). CDOs are often perceived as closer to the business and its customers, and are expected to possess adequate technological competence (El Sawy et al., 2016; Singh & Hess, 2017), project management experience (Matt, et al., 2015), and change management skills (Singh & Hess, 2017).

The CDO’s role might depend on the organization’s size, complexity, and digital transformation maturity (Singh & Hess, 2017). Also, the role of the CIO and the IT-department and the relations between the CDO and CIO in regards to digital transformation impact on the CDO’s role (Haffke, et al., 2016). Researchers have defined several role types of CDOs. A CDO can perform more than one and perhaps all of these roles, though one of the roles might seem most
prominent (Singh & Hess, 2017; Tumbas et al., 2017). Entrepreneurs (Singh & Hess, 2017) or digital innovators (Haffke et al., 2016) seek to acquire knowledge on available technologies, gain an understanding of the customers and of the competitive environment and use these insights for developing digital transformation strategies. Digital evangelists (Haffke et al., 2016; Singh & Hess, 2017) inform and educate executives and employees about digital opportunities, and motivate for transformation. As coordinators (Haffke et al., 2016; Singh & Hess, 2017) or digital harmonizers (Tumbas et al., 2017), CDOs coordinate digital transformation efforts and work across organizational silos. Digital marketers primarily work on streamlining online and offline marketing channels to enhance customer relationships (Tumbas et al., 2017). Digital advocates (Haffke et al., 2016) function as a liaison between business and IT functions in organizations where the CIOs involvement in IT exploration is low. Finally, digital accelerators focus on exploring possibilities for innovation, through experimentation with new technologies (Tumbas et al., 2017).

4. METHODOLOGY

4.1 Research design and data collection

We conducted an explorative study, based on interviews with the CDOs of 20 organizations. We sought informants from organizations representing a variety of entities as to size and sector. Five of the informants represent public organizations (municipalities, directorate, university, transportation); fifteen private organizations from industries such as insurance, banking and finance, media, security, service, and manufacturing. The size of the organizations (as measured by number of employees) varies from less than 100 employees to more than 10,000 (cf. Table I). At the time of the interview, the organizations were at different stages of digital transformation. All of the organizations had however reached a certain awareness of the necessity for digital transformation, and were working on or had already established certain governance structures for the transformation process.

Half of the CDOs had occupied the position for more than a year, the other half for less, though some of the latter had previously had other leadership positions related to IT or strategy within the organization, but had since been promoted or their position had been redefined. Several of the CDOs have technical educations, others business education or specialized training related to their field. In general, the CDOs had extensive experience before they started in the position, typically including leadership and/or project manager roles. Most of the CDOs lead and are
supported by a unit, though the size of this unit varies from a couple of employees to more than 100. Seventy-five percent of the informants are part of the top management team.

<table>
<thead>
<tr>
<th>CDO-identifier</th>
<th>Sector</th>
<th>Public/private</th>
<th>Number of employees</th>
<th>CDO started</th>
<th>CDO in TMT</th>
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<tr>
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<td>100–500</td>
<td>2014</td>
<td>No</td>
</tr>
<tr>
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<td>Private</td>
<td>100-500</td>
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<td>Yes</td>
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<td>500–1,000</td>
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<td>2016</td>
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<td>1,000–5,000</td>
<td>2016</td>
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</table>

Table I: CDOs interviewed; industry, size of the org., CDO’s starting year, whether CDO is part of the top management team, whether CDO leads a unit

Most of the informants work for Norwegian organizations, a couple for multinational corporations with a large Norwegian branch. Norway is considered one of the most digital countries in Europe, based on the country’s fixed and mobile broadband coverage, percentage of internet users, integration of digital technology and digitalization of public services (DESI, 2017). The Norwegian economy remains strong, supported by large petroleum resources, with low unemployment and poverty rates. At the same time, economic growth has subsided over the last few years. Private organizations are experiencing increasing competition due to globalization and disruptive technologies, whilst the public sector is facing considerable challenges related to the ageing population in the coming decades. The generally high cost of employment combined with declining natural resources are increasing the need for greater efficiency, further technological development and innovation (OECD, 2017). Norway and Norwegian organizations thus have a strong base for digital transformation in the form of
experience with digital technologies and digitalization, as well as available financial resources, but a clear need for succeeding with the transformation. We therefore consider Norwegian organizations particularly relevant for this study.

We conducted the first interview in May 2016. To a certain extent, this interview served as an inspiration for the remainder of the interviews, which took place in the period February - April 2017. The interviews lasted for up to one hour. Each interview started with a brief introduction of the research project and the researchers. We promised to anonymize all persons and organizations whenever and wherever the results would be used, and to not include quotes in a way that might identify the CDO or the organization. We recorded the interviews with the approval of the informants, and transcribed most of the interviews verbatim. For the interviews that were not transcribed, the interviewer developed detailed summaries shortly after the interview.

We conducted in-depth, semi-structured interviews, taking an explorative, bottom-up approach, as we sought an understanding of the challenges related to digital transformation and the contribution of CDOs. We asked the informants to tell us about digitalization projects the organization had undertaken so far or was planning to undertake, the CDO’s role in the transformation and the challenges they perceived related to digital transformation and their own role.

4.2. Data analysis

The data analysis started with two of the authors reading through all the transcribed interviews and summaries several times, and coding the interviews independently, using exploratory coding methods (Saldaña, 2015). We began with a holistic coding approach combined with in-vivo coding in order to identify key themes or issues and gain a broad perspective of the dataset as a preparation for more detailed coding. Based on the initial coding, we developed a data matrix of all the data.

The specific focus on tensions emerged during the research process. Subsequently, we searched specifically for evidence of:

- tensions; and
- the strategies and practices CDOs apply for managing these.
We first focused on identifying the organizational tensions CDOs experienced. We started by paying particular attention to discourse indicating some kind of opposition, for instance by the use of antonyms, specific words related to challenges or tensions (e.g. ‘challenge’, ‘discussion’, ‘resistance’, ‘friction’) and adversative conjunctions (e.g. ‘but’, ‘yet’, ‘although’) or sentence connectors (e.g. ‘on the one hand . . . on the other hand’). We used axial coding to categorize different tensions. Some of the labels used to support the coding were inspired by the extant research on tensions, others materialized from the data.

During the analysis, we identified a number of tensions. However, we chose not to include a tension in the paper if the interviews did not provide sufficient evidence on how CDOs contribute to managing the tension. This for instance pertains to the tension of exploitation vs. exploration, which is widely discussed in academic literature (Lavie et al., 2010). CDOs described exploitation vs. exploration as a relevant tension that must be managed, but did not elaborate in detail on how they contribute to managing this tension.

We concluded on five main categories of tensions (though we saw related tensions nested within some of these):
- existing vs. requisite competence, capabilities and work practices;
- individual interests vs. the collective good;
- business units vs. the IT department;
- individual business units vs. the organization as a whole; and
- the CDO vs. existing structures.

We worked inductively to develop categories of practices CDOs undertake related to managing each of these tensions, assigning codes such as ‘establishing a common vision’, ‘developing an understanding’, ‘facilitating dialogue’, ‘giving meaning to’ and so forth. Based on the final stage of analysis, we concluded on that CDOs manage tensions first and foremost by acting as a sensegiver. We were able to identify a set of practices CDOs perform in order to influence organizational sensemaking processes. After writing up our analysis, we sent this to the informants, giving them an opportunity to comment on our analysis.
5. FINDINGS AND ANALYSIS

We first provide three illustrative descriptions, then present our overall findings.

5.1 Illustrative descriptions

We found three of the interviews to be particularly illustrative of tensions related to digital transformation and the contribution of CDOs to managing these. We therefore include a short description of the role of these three CDOs and the tensions they experienced.

5.1.1 Digital transformation of an insurance supplier

In 2015, CDO-1 was recruited internally to head the company-wide digital transformation program of a large insurance supplier. The objective of appointing a CDO was to speed up the transformation, as executives saw the need to face head-on current competitors and potential new entrants threatening to disrupt the market. Self-service solutions, automation and robotics were central tools in digitalizing the business, and the CDO pronounced the solutions more innovative than the solutions most of the competitors currently provided.

The CDO described how digitalization of products and services poses requirements that are contradictory to existing practices, mindset and capabilities:

We are quite good at insurance. We are good at handling risk. We are not equally good at being user friendly. Nor is IT among our core competences. (...) The previous norm of our industry involved complex products, described in heavy stacks of documents, which we sent our customers; because our customers were used to complex products, they were used to that when they made a purchase, we would explain the terms to them. Now, when customers would like to contact us through a smartphone, this significantly impacts our possibility to explain. That means that it is not possible to transfer all that complexity. (...) To make the organization acknowledge that we cannot continue doing business that way, is very, very hard. This is an extremely conservative industry; avoiding risks and not taking chances is the foundation of our existence.

5.1.2 Digital transformation of a public university

CDO-2 was employed by a public university in 2016. The organization is in an early phase of digital transformation aiming to improve services for the users and make better use of the organization’s resources. The CDO is part of the top management team and has the combined role of CDO/CIO. An important responsibility of the CDO involves ensuring that all projects are aligned with the overall strategy: ‘I’m pursuing a holistic focus, a relation between different measures and projects and the objectives we as an organization are striving to achieve’. However, the CDO considered that the main purpose of his role was reducing the uncertainty
in the organization traditionally created by organizational silos and increased by information technology:

What’s common for all IT systems is that the information flow always moves across traditional boundaries of responsibility, right, and that creates uncertainty regarding who’s actually responsible at which times. The uncertainty that occurs at the intersection between these boundaries is further challenged by technology. Two factors are important as to gaining control and reducing uncertainty; one is related to cross-functional collaboration and use of resources, and the other to changing governance structures in a way that allows decisions to be made at a lower level than the top management and through arenas where the organization is represented across units.

5.1.3 Digital transformation of a bank alliance

CDO-3 was hired by a bank alliance in 2014. According to the CDO, at that time the alliance’s digital services were limited, and the foremost objective of hiring a CDO and initiating a digital transformation was to catch up with the competitors. A large variance as to managers’ understanding of technologies and of the importance of digital transformation represents a central challenge for the CDO:

We’ve got a spectrum from the bank manager who takes a selfie in front of the new banking facility and thinks this is digitalization, to other managers who’re asking how we can do this through a so-called black office, running itself without the lights on.

The CDO described a tension between business units and the IT department. Business units possessed extensive business competence but inadequate technological insight. The IT department had substantial technological competence, but inadequate understanding of business and customer needs. Also, business and IT had conflicting interests as to the choice of IT solutions and development approach. The CDO perceives his role as necessary for the ‘business side’, as ‘business units are very immature as to thinking digitally’, but aims to bridge the gap between business and IT. The CDO told a story illustrating the interaction between him and the IT department:

Because this was a completely new role, where IT previously had been in the driving seat. Who had been saying: ‘No, we cannot do this; here is what we should do or not do’. And then comes sort of a hammer, saying, ‘This I’ve done in my previous positions for a tenth of the cost and let’s use this method and this is not so hard, and we’ll manage, and so on’. And then, when everything is new, you’ll meet, well, not just a little, but a lot, ‘This is not for you, but for us to decide’, sort of ‘We can’t do this’. And then I ask why, and they say, ‘We don’t have the competence’; ‘Well, then let’s rent the right competence’. And I’ve got these budgets, right. (. . ) ‘Yes, but it should be done in-house’. ‘Yes, but these consultants can sit and work in-house, right, we can talk together, and use Jira and the office pack and stuff, right?’ And then it’s ‘Yes, but we need to define the project down to the smallest detail’. And then I say, ‘Well, we can use some agile methods and stuff, where we start to deliver, and maybe there’s a lot we eventually
won’t deliver, too. What’s important is to deliver business value, right? That enables the customer to make an order, even if it has to be printed out on the other side and plotted into some system, and we can use robotics or something’. And then it’s a lot like they’re being put on the spot, right. And then there’s a lot of friction, because previously they were the ones who were asked, and now there’s someone else who gives positive answers and whom the organization starts asking, because here the organization gets the answers they would like.

5.2. Tensions of the digital transformation

In this section, we present our findings on each of the five categories of tensions we identified and on how CDOs seek to manage these through different sensegiving practices.

5.2.1 Tensions between the existing vs. requisite competence, capabilities and work practices

‘We simply need to adapt. And the fact that it might be scary, well – that’s change.’ (CDO-10)

Tensions identified by the CDOs:

We define the first category as tensions between the organization’s existing vs. requisite competence, capabilities and work practices:

- tensions between the organizations’ existing competence and a requisite digital competence;
- tensions between existing capabilities and new capabilities required for digital transformation; and
- tensions between existing work practices and new work practices enabled by digital technologies.

Informants described their organizations’ understanding of digital technologies and digital transformation – their digital competence – as severely limited. For instance, CDO-15 remarked: ‘There is no internal competence whatsoever on digital transformation in our organization. It is very difficult for me to get support for the changes I consider necessary, and to make them understand what digital transformation actually is’.

According to the CDOs, the inadequate understanding also pertained to the upper level of the organization: ‘Competence is a huge challenge both as to the executive board and to the top management’, CDO-15 elaborated. CDO-3 pointed to a telling example from the executive team, ‘We even had some statements like ‘Aren’t we soon done with the Internet now that we’ve got webpages up and running?’’

During the interviews, informants talked extensively about the need for new capabilities in order to accomplish a digital transformation. Keeping up with the competition requires meeting
customers’ demands and expectations. Furthermore, CDOs perceive a strong sense of urgency related to the digital transformation, inducing a need for rapid IT development:

Because everything is developing so fast, we can no longer have the long development times we used to have. In order to succeed, we need to gain a whole other tempo, a whole other way of thinking. And that demands a lot. (CDO-1)

Requisite capabilities include agility, experimental thinking, customer centricity, and a digital mindset. For many organizations, these don’t represent core capabilities, but are even the opposites of existing ones, as CDO-1 dryly observed: ‘People working in the insurance industry are not necessarily very agile and innovative’. CDO-13 commented on the tension between the existing internally oriented organization and requisite customer orientation: ‘The major shift is to turn the organization from thinking internal needs to placing the needs of the customers in center, and let that guide much of our development, our priorities, and the paths we choose’.

CDO-5 described tensions between existing and requisite work practices as ‘a friction related to having to do things in a new way’. CDOs experience that employees are generally positive about new digital technologies, but do not – or will not – acknowledge the impact changes entail for themselves at an individual level. ‘I think they are sort of enthusiastic, but you won’t have to dig much under the surface until you meet ‘Sure, but it doesn’t necessarily affect us’”, CDO-1 commented. Tensions also arise as adopting new practices requires unlearning existing ones that are deeply ingrained in employees’ habits and mindset:

In many ways, this is a sturdy, bureaucratic organization, which is used to writing reports and delivering something that can be put in a folder. That is actually a challenge, to make the organization unlearn such things and rather think about deliveries and services in a new way. (CDO-5)

Sometimes, existing practices are so embedded in the organizational identity that changes related to digital transformation can be perceived as a threat to this identity: ‘We risk losing part of what makes us us’, CDO-1 concluded.

Likewise, CDOs discussed a perceived contradiction between instituting new practices and sustaining the assets of existing ones. For instance, CDO-1 described a strong organizational culture of relating personally to customers, and a skepticism in parts of the organization as to upholding quality and profitability through digital platforms and new and untried practices:

Digital transformation entails removing part of the physical interface towards the customers – we are in fact indirectly telling employees that ‘sitting and calling customers does not create enough value; the customers can accomplish these tasks on their own’. This is very hard to accept for someone who has been calling customers for more than 20 years, and who has been taught that insurance is a complex product, which needs to be explained to customers.
The CDO continued:

We have had some discussions, for instance, regarding the profitability of customers and digitalization, where we can see that they are afraid that customers who take out an insurance policy through digital platforms will be less profitable than customers to whom we sold insurance by phone. I think there is kind of a perception that customers who purchase insurance online are some young bandits.

How CDOs manage the tensions:

We find that in order to manage tensions between existing vs. requisite competence, capabilities and work practices, CDOs engage in sensegiving practices that include establishing a dualistic dominant discourse: a ‘digital war discourse’ combined with a ‘digital opportunities discourse’. Through this discourse, CDOs aim to foster acceptance of changes as a) imperative and urgent, and b) positive. Furthermore, CDOs seek to manage tensions by helping the organization make sense of digital technologies and digital transformation, as well as of customers’ needs and expectations.

Throughout the interviews, discourse centering on the looming threat of disruption and on the grave consequences of not being able to compete and of not being able to meet customer demands was prominent. Utterances bearing negative and fear-provoking connotations, like ‘crisis’, ‘destructive forces’, ‘the enemy’, ‘it will hit us’ and ‘dagger against the throat’, contribute to creating a sense of digital transformation as inevitable, crucial and urgent. We call this a ‘digital war discourse’. CDOs also employ such discourse towards executives. CDO-3 explained how he sought to convince the executive team to take action:

About half a year ago, I discovered PSD2 [Revised Payment Service Directive] whilst perusing some blogs, and I read the whole directive and went straight to my boss and said, ‘Everybody should put on a red t-shirt saying PSD2, because this is a crisis’.

An obvious threat and clear concept of the enemy makes it easier to justify changes and overcome resistance. CDO-20 described how fear-provoking discourse serves as a means of persuasion: ‘Sometimes I have to kind of say that this will be bad, in order to move those who are more skeptical in the right direction, in order for budgets, focus and resources not to suffer’. At the same time, the CDOs show noticeable enthusiasm towards digital transformation, and seek to create a sense of the changes as beneficial for the organization, including its employees and customers. This sensemaking is reflected through discourse employing words with positive associations, like ‘opportunities’ and ‘exciting’. Some organizations employ the metaphor ‘journey’ as a label for the transformation process, and emphasize the positive impact of the transformation, as described by CDO-11:
The thing is that I think during this journey, it will be as I have already mentioned to all the people when I am talking to people internally and so forth, it will be a very positive experience for everybody, for most of the people I would say.

We call this a digital opportunities discourse. A central part of this discourse concerns how the transformation will enable the organization to better meet the customers’ increasing needs and expectations. One of the informants, CDO-6, described this as their ‘mantra’. A positive impact on the daily life of employees is also part of this discourse: ‘You need to work on establishing the right expectations that might contribute to the organization changing the established practice step by step’ (CDO-2). CDOs work on selling in changes through helping employees make sense of how changes benefit the employees. CDO-3 declared:

Of course the most successful systems, are the ‘straight-through’ ones, meaning those that don’t require a manual stop point and that give a real ‘what’s in it for me’ as to the daily work of our financial advisors. If they feel that they no longer have to do a lot of manual, standardized tasks, but instead the customers can handle them themselves digitally, that’s a major success.

Part of this sensegiving entails involving employees directly in the development of new solutions, for instance through service design. The following quote of CDO-7 exemplifies this:

And we see that where we’ve used service design, we also meet less resistance, because then employees and maybe citizens have been part of a dialogue, and then it’s easier for our employees to see that ‘this makes sense and of course I need to change the way I work’.

The CDOs use different arenas for communicating the vision and the changes it induces, including organizational meetings, workshops and informal arenas. CDO-1 reported that during meetings in the steering committee, communication is always on the agenda: ‘What do we need to communicate now?’ CDO-3 pointed out the persuasive impact of formal presentations:

It’s not real unless it’s presented through a PowerPoint; I’m not even joking. There has to be a PowerPoint, and then we build a story, and explain and use some hard facts to support it, like the fact that 86% of our customers use a mobile app for banking, so why do we need an internet bank.

CDO-10 described how he seeks to meet the organization through different meeting-places, also informal ones:

I have presentations for the business units all the time. I try to inform them; ‘I’m working on what you’re going to do in the future, in order for you to have something to do in 5-10 years’. We use email and intranet, but not everybody uses all the systems...so I need to be present in the canteen and talk about things, talk in staff meetings and so forth.

The informants also sought to manage tensions between current and requisite competence by helping the organization make sense of digital technologies and digital transformation. ‘I try to understand what they don’t understand, and to teach them’, CDO-15 stated. CDO-2 described the terms digitalization and digital transformation in themselves as effective tools for
sensegiving, as they contribute to a precise understanding by framing IT-enabled transformation as much more than IT:

For me, digitalization seems a much better word or term than the terms we used earlier when we put an e- in front of everything when talking about the use of technology, e-commerce and so forth. The mental image is much more correct, because implementing technology also implies that you’ll need to do something about the organization.

The vision for a digital future is also a means of giving sense to digital transformation as a concept, and thus of developing the organizational understanding of what the transformation entails. CDO-16 added, regarding the purpose of establishing a vision: ‘Not just to communicate, but to ensure that we are talking about the same things’.

Informants in particular emphasize helping executives make sense of digital transformation and of how technology can enhance the value of the organization:

I know from experience that many leaders distance themselves from technology and feel alienated, and I think that is based on the feeling that they know little of what is inside the machines. But I think it is not really necessary for them to possess this knowledge. What’s important is to understand why the organization needs to change and how technology can provide part of the answer. (CDO-2)

In addition, CDOs seek to give meaning to the requisite capabilities: ‘We are working on making the whole organization understand and relate to a more experimental way of attacking the issues’, CDO-18 said.

In order to address perceived tensions between new practices and sustaining quality and profitability, CDOs listen to employees’ concerns in order to make sense of these, and emphasize in their sensegiving the importance of findings ways of maintaining such assets in digital practices and platforms: ‘We cannot just decide not to have digital customers. What’s up to us, that’s working on how to make it profitable, not to extinguish the digital channel’, CDO-1 asserted. An important part of the answer lies in developing new capabilities, in particular related to how to meet the customers. CDO-1 saw the necessity of increasing employees’ awareness that maintaining assets in digital platforms requires a different and more customer-friendly approach:

Sometimes we write a text, and our customer looks at it and says: This is not human language, I can’t understand what it means. Our customers’ patience towards this kind of behavior is waning. (…) I believe that’s an important part of disruption, it’s not just technologically oriented, but customer oriented. (CDO-1)
Likewise, CDO-3 elaborated on helping the organization make sense of customers’ needs and expectations and in this regard what communication through digital channels entails:

I am sort of the customer ombudsman in the organization. So if it’s like ‘We don’t understand this’. As to insurance, when you ask them whether the term ‘power train’ must be included – ‘Couldn’t we simply write “engine”, right? ‘No, we can’t, because we’ve always referred to the power train, because that term also includes the strut between the engine and the gear box, right.’ ‘All right, but why don’t we just include it and call it all “the engine”?’. Ok, ok, that was doable. There’s a lot in that process that involves waking them up, because in a way we are arguing from the customer’s perspective.

5.2.2 Tensions between individual interests and the collective good

‘It might come as a shock for them when they realize what the transformation actually might entail for them personally.’ (CDO-1)

Tensions identified by the CDOs:
We define this category as tensions between the collective good of the organization – and of society in the case of public organizations, and employees’ interest in the form of job security. The tension between individual interests and the collective good is a classic organizational paradox. However, digital transformation embodies and increases this tension: for individuals digital transformation might pose a threat, a cause of possible redundancy; for the organization, the transformation represents a condition for future success and survival.

CDOs of private organizations saw increased efficiency as necessary for the organization’s ability to remain competitive: ‘But unless we digitalize and do things more efficiently, in the long run we’ll have to sell our food at a higher price than at Seven Eleven or other places across the street. And then we’re outcompeted’ (CDO-6). CDOs of public organizations described digital technology as an enabler of solving public tasks with fewer people and resources, and thus, also over the long term of an essential transition of the workforce to the benefit of sectors like health and education:

There’s a strong focus on transition of the workforce. A strong focus on that, nationally in the big picture, Norwegian municipalities are said to need 50,000 new pairs of hands for health and education within seven years, and our share is fairly big. (CDO-8)

Accordingly, CDOs expressed explicit objectives for downsizing. ‘There are some rather cynical calculations that few people see’, CDO-1 remarked. Still, though the impact of digital technologies on job redundancy and increased unemployment rates is well known from the general discourse on digital transformation, CDOs indicated that the current awareness of how the digital transformation might affect job security was remarkably low:
Everybody is looking at the same examples, banks digitalizing their services and so forth. But not many of them actually relate to the personal cost for the bank employees. Everybody is happy that we are making some self-service solutions – the realization that this will cost somebody their job is surprisingly weak. (. . .) I think there is an idea that we’re automatizing some tasks in order for the employees to be less busy. But that’s not why we digitalize, it’s in order to make 20% of you redundant. (CDO-1)

Nevertheless, awareness is increasing, creating a tension that can lead to anxiety, decreased motivation and increased active resistance to changes. The tension is also amplified by the fact that changes are made during prosperous economic times, making it difficult for employees to make sense of why changes and layoffs are warranted: ‘We started the transformation program in the year when we delivered our strongest result so far, and that of course generates resistance, particularly now, in this kind of labor market’ (CDO-1).

How CDOs manage the tensions:

We find that in order to manage the tension between the collective good of the organization and employees’ interest in the form of job security, CDOs seek to foster acceptance of the tension through sensegiving practices, first and foremost by the means of the dominant discourse described in section 5.2.1. Furthermore, CDOs’ sensegiving includes not only what they communicate to the organization, but sometimes also what they omit to communicate.

Again, the dualistic dominant discourse described in the previous section – a ‘digital war discourse’ combined with a ‘digital opportunities discourse’ – serves as a means of giving meaning to digital transformation as both inevitable and positive. CDOs describe a general understanding in the organization that this is something that must be done: ‘There is a positive anticipation in the organization of digital transformation as an important and right thing to do’ (CDO-2). Furthermore, ‘digital opportunities discourse’ creates a sense of excitement related to new digital technologies:

There’s very little resistance. Which is surprising, because, well, the situation is in fact rather dramatic for them – a lot of this means that jobs will become redundant. And I think people understand that, but still everybody I talk to are sort of enthusiastic, maybe because digitalization is exciting and people think better and more modern services and solutions and new technology and so forth sounds cool. (CDO-9)

The CDOs are to a varying extent open towards employees regarding the risk of job redundancy. Some of the organizations had announced concrete goals of downsizing, even through the media. Informants described how they sought an open communication on these issues. CDO-11 pointed out the importance for her as a leader of openly acknowledging the tension while
showing understanding and empathy, as ‘it could be painful for some people and we need to understand that and deal with that’. In other cases, CDOs see that managing the tension includes not aggravating the tension by conveying concrete numbers. While CDOs do not neglect or seek to conceal the risk of job redundancy, they choose their words carefully in their communication with the organization. ‘I would rather not for the transformation program to be perceived as an evil, because that would be harmful for the organization’, CDO-1 stated. The CDO continued:

I cannot be credible unless I’m open regarding downsizing. In my communication with the organization, I don’t necessarily say that we have calculated that the solution we present today will save us one yearly position. However, I am very clear that we don’t do anything unless we achieve any cost reductions. (...) It’s important for us to explain to the organization that we are making significant changes during prosperous times in order to invest in the future.

5.2.3 Tensions between business units and the IT department

‘My opinion has always been that the most beautiful materializes in the interface between technology and the business.’ (CDO-3)

Tensions identified by the CDOs:

We define this category as tension between business units and the IT department, related to:
- inadequate understanding of the other pole’s knowledge area;
- divergent perspectives on approaches to IT development and implementation;
- divergent perspectives on the suitability of different technologies; and
- divergent perspectives on who should be in control of IT development.

Informants describe a knowledge gap between business units and the IT department, which makes it challenging for business and IT to relate to each other:

There are many skilled people in the business who know what they want, but they lack the technological insight; they don’t quite know what is possible. And then there are people in the IT department who know a lot about software and various technical solutions, but who don’t quite know how to meet the business. (CDO-16)

Tension between the perspectives of business and IT on technology and on IT development and implementation stems from different concerns and priorities. The business is concerned with developing rapid solutions providing business value, while IT emphasizes making the right technological choices and employing standardized development practices supporting quality, stability and security. In the interaction between the CDO and the IT department referred to by CDO-3 in the illustrative example (5.1.3), we hear the voices of business (in this case transmitted by the CDO) and IT reflecting the divergent perspectives. Business units seek ‘business value’ and expect ‘positive answers’ to their requests. The opposing voice of IT counters ‘We can’t do this’, listing several arguments. Some of the arguments relate to the
department’s insufficient competence and capacity; others to a skepticism towards technologies and development practices that business units favor.

These two tensions are clearly intertwined. Without an adequate understanding of each other’s knowledge areas, the two domains are unable to make sense of each other’s perspectives, concerns and priorities. Insufficient understanding of the business, customers and competitors obstructs the IT department’s ability to make sense of the business units’ perspective. Correspondingly, business units’ lack of insight into issues such as data protection and system integration impedes their understanding of why some technological solutions seemingly providing business value might be problematic.

Statements in the example described by CDO-3 also suggest that the IT department fear losing influence and control over IT development (‘But it should be done in-house’). An increasing extent of IT development is handled by other parts of the organization, as ‘That’s where you find the real understanding of the problem, as well as the capacity and the resources required to solve it’ (CDO-2). This development poses a threat to the IT department’s influence in the organization and control over IT resources. ‘It is incredibly important to be clear that digitalization projects and technology implementation should not be left to the technologists’, CDO-2 postulated.

How CDOs manage the tensions:
CDOs see connecting the two domains as one of their key contributions to digital transformation: ‘My unit, we are sort of the ones building a bridge between the business and IT, and between IT and the business’, CDO-3 explained. CDO-9 proposed that a main reason why his position was established was to “handle the relations between IT and the business”.
We find that CDOs manage the tension between business units and the IT department through four different sensegiving practices aiming to increase their understanding of each other’s knowledge areas, and thus to help business and IT make sense of each other’s perspectives, and aiming to construct a meaning to the role of the two domains as complementary parts of the organization that jointly contribute to its objectives.

We distinguish four practices CDOs undertake. First, as described in section 5.3.1, CDOs seek to help the organization make sense of digital technologies and digital transformation: ‘It is extremely important to understand that the use of technology has to do with so much more than
just the technology itself” (CDO-2). Second, in order to increase the IT department’s acceptance of digital technologies deemed less stable and secure, such as ‘Lightweight IT’ and ‘Bring Your Own Device’, and of rapid development approaches, CDOs actively engage with the IT department, seeking to give meaning to business and customer needs:

I say, ‘Well, we can use some agile methods and stuff, where we start to deliver, and maybe there’s a lot we eventually won’t deliver too. What’s important is to deliver business value, right? That enables the customer to make an order, even if it has to be printed out on the other side and plotted into some system, and we can use robotics or something’. (CDO-3)

Third, CDOs seek to give meaning to digital transformation as the responsibility of the whole organization, and to the role of the different domains in accomplishing the transformation:

The goal is not for me to remain the driving force, but for the whole organization to become digital. (. . .) At some point, I hope I’ve succeeded so well in this regard that I won’t be needed much longer. (CDO-4)

In the dialogue between the CDO and the IT department related by CDO-3, we hear how the CDO starts by acknowledging the IT perspective (‘Yes…’), then introduces a counterargument representing the business perspective, phrased in a language that IT understands:

‘It should be done in-house’ (IT)
‘Yes, but these consultants can sit and work in-house, right; we can talk together, and use Jira and the office pack and stuff, right?’ (CDO)

Finally, CDOs emphasize facilitating dialogue between business and IT, through common meeting-places and collaboration processes. CDO-16 commented, ‘I think very many of the ideas are generated when we meet, both the business and the IT’.

5.2.4 Tensions between individual business units and the organization as a whole

‘We need to have a perspective of working together, all of us, without walls between departments or between different leaders with different interests. (. . .) There is too much friction.’ (CDO-10)

Tensions identified by the CDOs:
We define this category as tension between individual business units and the organization as a whole reflecting conflicting perspectives and interests. Nested within these tensions are tensions between individual business units.

Such tensions typically stem from silo thinking and business units considering their own interests and objectives rather than the interests and objectives of the organization as a whole. CDO-16 referred to a famous line from a poem authored by the celebrated Norwegian writer Bjørnstjerne Bjørnson (1832–1910) to describe these tensions: ‘We need to avoid units saying,
‘Forget about Norway, long live Toten [small Norwegian municipality]’. This line is used in Norwegian discourse to describe individuals or groups working for their own interests, while disregarding the interests of the whole of which they are a part. Such behavior can be related to disagreements regarding objectives and priorities, sometimes also between organizational subcultures with differing perspectives.

The organizations had taken different approaches to digital transformation. Some had chosen a top-down approach from the beginning; starting with the formulation of a digital strategy. In other organizations, the transformation started with various digitalization projects originating from different parts of the organization and aiming to solve local needs. Each of these approaches had surfaced tensions. CDOs working in organizations taking a top-down approach experienced a tension between a culture of consensus and effective decision-making:

> We had a governance structure with all the bank managers, and the age spectrum was wide, but over time younger people were hired as bank managers and started calling for digitalization, but were getting nowhere because everybody had to agree and one person could block the decision for them all. (CDO-3)

> Many have the attitude that if I didn’t make the decision, I am not responsible. And that is not good enough. (…) We have a very strong culture of consensus, that everyone should be heard. (CDO-1)

CDOs of organizations that had begun with a bottom-up approach had observed a lack of coherence and collaboration across units:

> When I started here, I realized that some of the main challenges of succeeding with the digital transformation are related to our history. Because the history, well, there are several thousand people in this organization, and lots of talented people, and some highly competent people in IT and digitalization, but they’ve been working in a very fragmented way. They’ve just adhered to a local logic and local objectives, right? (CDO-2)

Informants described how different units undertaking their own digitalization projects based on local logics and objectives had led to a situation where exploitation of knowledge, distribution of resources, synergies, technical solutions and infrastructure were not optimized across the organization. Informants strongly emphasized the need for increased collaboration across the silos and for advancing a corporate perspective. CDO-1 expressed a hope for the future: ‘I hope we can reach a point where we see the organization as a whole’.
How CDOs manage the tensions:

We find that CDOs see their role as a fundamental means of binding the organization together during the digital transformation process. CDOs manage the tensions between individual units and the organization as a whole through *sensemaking practices aiming to construct a sense of how individual units contribute to the organization’s overall objectives*.

Some of the informants use metaphors symbolizing the connection they aim to achieve. ‘This is about uniting the kingdom’, CDO-16 stated. CDO-9 described his role in terms of a coach ‘My role is first and foremost to ensure that everybody, eh, plays for the same team’.

CDOs take a prominent part in developing a digital strategy for the organization. A digital strategy provides a common goal and direction. CDO-11 explained:

> So all these initiatives that were already started up when I joined the company, they were running these initiatives, but what we are doing now is that we are aligning them to the strategy, to ensure that we are actually focusing the right energy, that we are prioritizing the right initiatives that are creating value, that we are steering the company in the right direction and so forth.

A digital strategy and a common goal facilitates the sensemaking as to how the different parts of the organization contribute to fulfilling the strategy and reaching the goals, giving meaning to the units as important and interrelated parts of a whole.

In some organizations, the CDO had been given a mandate of central governance. The CDO as a central governance mechanism for the digital transformation gives meaning to executives’ perspective of the importance of central governance. The CDOs argued that central governance ensures connection between initiatives, and technical solutions that support standardized processes and customer management across the organization:

> And there has been no overall governance, or a frame to connect all these initiatives. And that’s what we’re trying to establish, right? (CDO-2)

> It’s important that all our claims are handled in a similar way across the organization, and that has an impact on our technical solutions. If the claims unit were in charge of developing the solution, they would not consider what other self-service solutions in the company look like. (CDO-1)

> When I see that all the business units would like to digitalize their processes, I and my unit work on trying to rig this so that we can accomplish as many synergies as possible, that we use the same components if possible, that we have a corporate perspective when we choose technological solutions and who’s working on which projects and these kinds of things. (CDO-9)
Nevertheless, the CDOs agree that the organization must still be heard and involved. In the words of CDO-2: ‘We need to be careful not to short-circuit the way the organization works’. According to CDOs, a solution was centralizing decisions regarding strategy, funding and resources, but trusting the units involved with the detailed planning and implementation. CDO-2 went on to clarify the relationship between central governance and local freedom:

Of course there has to be large local and decentralized degrees of liberty, because I think that’s essential as to finding good projects and implementing them well. But nobody will be allowed to go through with digitalization projects unless the projects are considered within a larger organizational context.

Similarly, CDO-1 explained that they try to involve the business as much as possible, though often at a time where the decision to a certain extent had already been made:

For instance, I’ll say: ‘Listen, now we are going to digitalize claims’. There is no question whether to digitalize or not. But then we’ll have a dialogue regarding the solutions. (. . .) We have to get used to, also the leaders, that we need to accept and live with changes and decisions made by others. (. . .) And that is my responsibility as a leader to communicate.

Tension between the organization as a whole and its units is intertwined with a related tension between executive capabilities of overview vs. insight. Executives hold the overall picture and overview of the organization, but cannot necessarily be expected simultaneously to have detailed insight into units and processes. The CDOs pointed out that traditionally, decisions regarding projects and investments crossing organizational units are brought high up in the organization. However, according to CDOs, as that is not where the real competence required for making such decisions is found, this practice frequently results in substantial uncertainty in the organization. As an alternative, CDOs facilitated collective meetings where the CDOs sat down with representatives of different business areas, and where all their voices could be heard. As CDO-9 elaborated:

We meet around the table once per quarter, and everyone brings a priority list and wish list, and we bring into the meeting an overview over the capacity for the next three months, and we have a discussion on what we can start doing and what will have to wait, and we try to agree.

5.2.5 Tensions between the CDO and existing structures
‘We are dealing with some business areas that are generally used to making all the decisions themselves, and then we come and say, ‘No, in this area’ - which they perceive as theirs – ‘you cannot make the decision’. That generates some discussions.’ (CDO-1)

Tensions identified by the CDOs:

We define these tensions as tensions between the CDO and other leaders and units in the organization, related to:
the role of the CDO as a facilitator vs. a perception of the CDO as an intrusion and
local autonomy vs. central control.

Introducing a new position in the organizational hierarchy, and frequently also a new unit
supporting the CDO, creates certain tensions between these new structures and existing ones.
Informants described their role in humble terms, seeing themselves as enablers and facilitators
of the digital transformation. ‘Frankly, I am not interested in titles, and my role is not to sit on
top and decide. I facilitate and empower an innovative process’, CDO-13 asserted. Likewise,
several of the CDOs emphasize the importance of giving business units ownership over the
transformation, like CDO-9:

I think of my role as an orchestrator of the digital transformation. And the reason why I say so
is that instead of leading or owning the process, I am highly concerned that it should be the
business areas who should own their priorities and goals for digitalization projects.

Still, part of CDOs’ assignment involves questioning existing practices and processes: ‘And we
need to be able to ask the sort of tough questions’, CDO-3 declared. CDO-6 described his role
as follows: ‘I guess the role is new to many organizations – to go around and kind of liven up
the traditional, old way of working, and ask questions “why”, and get going processes aiming
to find good solutions’.

Despite a humble approach, CDOs are easily perceived as somebody ‘coming to tell us how to
do our job’ (CDO-1). Business units don’t necessarily appreciate this kind of involvement or
interference. CDO-7 told how organizational members question his right to meddle in their
business:

It’s a challenge working as a new unit in the organization, because whereas it’s a given what for
instance the HR department or accounting does, you’ll get kind of: ‘So, what it is you’re
supposed to do?’ And then of course we tell them and start working based on this, but then
you’ll hear: ‘Yes, but are you also supposed to have an opinion on how we are organized?’

One of the informants, CDO-15, described a strong friction between him and the commercial
director, leaving the CDO with limited room for maneuvering – ‘I have the necessary budget,
but no mandate’. According to the CDO, the friction was a result of very low understanding
and support of digital transformation among executives. Also, business units were unwilling to
give up any of their authority:

We have been good at formulating a customer focus in strategy documents, but when it comes
to actual action, as to how you need to run projects and set objectives, it cracks, because then
you’ll have to leave the responsibility to someone else, not those who are used to being in charge.
(CDO-15)
Tension between the CDO and existing structures also pertains to relations between the CDO and the IT department. This tension stems from a perceived difference between these two roles as ‘the hare and the turtle’ (CDO-3). Though business units might resent the CDOs interference, they also perceive the CDO as innovative, as an advocate of digital front-end technologies and as positive to business requests. The IT department, on the other hand, is perceived as more traditional, occupied with back-end systems, and less understanding of business and customer needs. The following quote from the aforementioned example of CDO-3 interacting with the IT department illustrates this tension:

And then there’s a lot of friction, because previously they were the ones who were asked, and now there’s someone else who gives positive answers and whom the organization starts asking, because here the organization gets the answers they would like. (…) 

How CDOs manage the tensions:

Managing tensions between the CDO and existing structures involves constructing a sense of the CDO and his/her unit as a positive contribution to the organization, through openness related to their job, a diplomatic approach, and by proving their worth to the organization.

CDOs try to justify their function through transparency regarding how they work. CDO-7 related his answer to the voices questioning the extent of the CDO’s interference: ‘Well, you know, we can’t just adjust the form, you know, we need to look at how you work because the technology gives us new opportunities as to providing services’.

CDOs also stressed the importance of a certain diplomacy, not just outgunning the organization. CDO-3 stated, ‘My job involves being kind of a diplomat, but maybe do exactly what we can manage plus a bit more, just so that it hurts a tiny bit’. CDO-15, who described difficult relations with executives, characterized his approach as ‘a bit of guerrilla tactics and lots of pedagogics’: ‘I express my opinion where I can and consciously work on preparing material for decision making, so that executives will have to consider it’.

Even more importantly, CDOs aim to establish their voice as one worth listening to. An ability to provide value to the organization and to individual units increases the CDO’s influence in the organization. This ability is founded on an extensive insight into digital technologies, the competitive situation, customers and the organization itself. In the words of CDO-3: ‘Knowledge is power’. CDO-20 remarked, ‘My voice is heard to an increasing extent, because everything I said two years ago has sort of come true’. This view was supported by CDO-8:
'The power lies in the competence of the unit, the people and in how I as a leader manage to put it all together into good advice and processes with those I collaborate with’. Keeping the organization’s trust involves consistently maintaining this competence. The CDO continued:

The role definitely entails a certain power or influence, but you need to maintain it and use it in a good way in order for it to be of value to yourself, your department and the system you serve. (. . .) If the advice you provide too many times turn out to be bad, the leaders might quickly turn elsewhere.

Many of the CDOs describe keeping up to date on technologies, the competitive environment and customers’ needs as a priority. CDO-4 told how he works on accumulating competence:

I spend a lot of time on updating myself. I read lots of blogs. I use social media a lot. Twitter is great for updating myself. I participate in seminars around the world. Staying updated on technology is one of the factors I am measured on.

The CDOs’ competence also strengthens their position as a sensegiver towards executives and middle management.

I experience that I have a large degree of influence. But it is based on good relations with the municipality’s top administrative leaders. Of course, if the relations were not that good, then… It is after all not me who decides. But since they’ve experienced that they get good advice and good strategies, well, we have not experienced that our suggestions have not been followed.

CDOs work closely with managers at different levels, in order to anchor changes in both top and middle management:

I am working in collaboration with all the members of the leadership team to get them on board with this, so to say, journey. To get them in alignment with what to focus on and what to prioritize. (CDO-11)

Of course, anchoring changes in top management is very important, but the most crucial in order to succeed with digitalization is anchoring changes in middle management. (CDO-2)

Finally, informants point to the power that lies in being the one who is able ‘to illuminate and interpret, make sense of what’s happening in our setting’ (CDO-3). CDO-16 elaborated:

The informal power I possess is probably more important than the formal one. In many ways, whoever sits and sums up all the suggestions, and conclude: ‘Ok, then I perceive that this is the totality’, and anchors his definition, has also made the decision. But of course there is no value whatsoever for me in making any decisions that the organization opposes.
5. DISCUSSION

Our analysis illuminates that digital transformation amplifies and creates tensions in the organization, and demonstrates the central role CDOs take in managing the tensions. Considering our evidence we discuss our findings in two points; first, we find that much of the CDOs perceptions are about sensemaking; i.e. interpreting and discussing the various tensions they experience in the organization. Second, we find that their strategies for managing these tensions are not primarily goal-directed actions, but a much more discursive approach, which we discuss under the term sensegiving.

5.1. Sensemaking

Sensemaking is a social and discursive process (Weick, 1995) where meaning is debated and co-constructed (Maitlis & Christianson, 2014). It is documented in research that digital transformation is a dramatic process for most organizations, and a rapid pace of technological development and threats of disruption (Lucas & Goh, 2009) lead to a perception of digital transformation as not only imperative, but urgent.

Our empirical evidence shows that organizational members struggle making sense of what digital transformation is and entails for the organization. A new CDO may feel overwhelmed by the scope and complexity of the task, and we observed that the CDOs work on informing and educating the organization, and thus facilitating organizational sensemaking processes as to what digital transformation entails. As the digital transformation unfolds, CDOs constantly engage in their own sensemaking, related to digital technologies, the landscape the organization operates in and customers’ changing needs and expectations. As other researchers have seen (Tumbas, et al., 2018), this sensemaking forms the basis for how CDOs help the organization understand the key issues.

However, we also find that the CDOs move beyond their own sensemaking, as they actively aim at influencing the discourse by soft, but persistent means. We conceptualize this as sensegiving.

5.2. Sensegiving

Sensegiving is a discursive practice where organizational actors intentionally seek to influence the sensemaking of others (Gioia & Chittipeddi, 1991). A key practice is to establish a dominant
discourse or narrative, which does not eliminate opposing voices but can make it harder for these to be heard (Boje, 1995).

The CDOs relates to the five types of tensions in rather cautious ways; they listen and discuss rather than getting into conflicts. They focus on discourse, and on understanding the conflicting view. CDOs give meaning to why the organization needs to transform through a dualistic dominant discourse where a ‘dominant war discourse’ and a ‘digital opportunities discourse’ constitute complementary elements (Seo, et al., 2004). This discourse is supported and reinforced by the general discourse in society, media, and markets, serving as a ‘ready-to-hand template or rationale’ (Abdallah, et al., 2011) facilitating selling the transformation to the organization (Dutton & Ashford, 1993). The dominant discourse does not silence voices opposing the changes, but promotes acceptance of tensions as necessary to live with – a ‘workable certainty’ (Lüscher & Lewis, 2008).

Assessing our evidence we identify a clear pattern in CDOs responses to the tensions, which we characterize as sensegiving practices. They are summarized in Table 2, and discussed below.

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Table 2: Summary of key findings on CDOs’ sensegiving practices

5.2.1 The ‘digital opportunities discourse’

The most frequent tactic among our informants was communicating a digital vision for the organization, focusing on both better customer services, and exciting opportunities for employees. As one of the CDOs told us: ‘I spend a lot of time working with the organization,
both my own unit and business units. It’s all about anchoring and communicating a common
vision. I see that as alpha and omega’.

To formulate and communicate a vision is seen as a key activity in management, and
particularly in digitalization research (Bharadwaj, et al., 2013). In addressing the tension
between existing and required competence, digitalization is framed not as a threat, but as an
opportunity. This tactic may serve to establish a dominant discourse of positive framing, to
counter internal resistance.

5.2.2 The ‘digital war discourse’
However, we also see in our materials that the CDOs do not always succeed in their positive
tactics. An alternative tactic is to increase the pressure by envisioning a negative scenario, such
as loss of competitive strength or fear of jobs. By giving meaning to digital transformation as
imperative and urgent, the CIO appeals to sensible collective action in order to meet various
threats. This dominant discourse may also serve to marginalize employees that oppose the
changes for individual reasons.

5.2.3 The ‘complementary IT roles discourse’
The tension between the IT department (and CIO) and the CDO is a recurring topic in
digitalization research (Horlacher & Hess, 2016; Tumbas, et al., 2018). Whereas information
systems (IS) development traditionally has been the concern of the IT department (Peppard,
2018), digital transformation and a digital business strategy position the IS as an integral part
of the organization as a whole. The CDO typically focuses on business innovation, analytics
and customer engagement (Tumbas, et al., 2017).

Our informants were very concerned with this relationship, aiming to avoid conflicts. The
sensegiving tactic was to engage in active dialogue with the IT department, to acknowledge the
IT perspective, but also to establish a discourse of complementary, not competing roles.

5.2.4 The ‘interrelated parts discourse’
It is important to remember that the traditional, functionally organised corporation addressed
most of its IT needs through separate IT ‘silo’ systems. However, digitalization encompasses
the whole organization, and creates new tensions on standardizing and integrating the IT
systems. We observe that the CDOs aim to establish a new discourse that views the domains as
not competing but complementary, and involves managing the tension through connection - bridging the gap between the domains while respecting their differences and complementary strengths (Seo, et al., 2004). This involves balancing and connecting the poles and aligning various projects and stakeholders (Gregory, et al., 2015), through a digital strategy, varying the extent of central governance combined with mechanisms like joined portfolio management, and a strong involvement of business units in detailed planning and implementation.

5.2.5 The ‘new unit discourse’

Does the organization really need a CDO? For many people in the organization the answer is not obvious. The role of CDO is new to many organizations, and researchers question whether this is a transitory position (Haffke, et al., 2016). The interviewed CDOs give meaning to their own role in the digital transformation, by engaging in the discourse in the organization.

Do they succeed in their sensegiving efforts? Do they gain a voice that is sufficiently articulate and powerful to be heard in the organization? Our empirical evidence does not provide answers to these questions. Over time it will certainly not be sufficient only to engage in the discourse; the CDOs need to achieve real results in order to gain legitimacy and power. But we do find that the informants possessed a wide organizational experience, experience with project and change management, and a combination of business and IT capabilities.

5.3 Contribution

Previous research has documented and analyzed the different roles of the CDOs. These include entrepreneurs (Singh & Hess, 2017), digital innovators (Haffke, et al., 2016) digital evangelists (Haffke, et al., 2016; Singh & Hess, 2017), coordinators (Haffke, et al., 2016; Singh & Hess, 2017), and digital harmonizers (Tumbas, et al., 2017).

Our study extends these insights by focusing more on the discursive role of the CDO. While the various roles above include discursive elements, our study reveals a richer picture. First, we find that CDOs engage deeply in the sensemaking processes of digitalization, in order to understand the associated tensions. Our analysis shows how the CDOs engage in five types of organizational tensions, mainly by communication.

Second, we find that their key tactics are to establish dominant discourses in order to mitigate these tensions. This is not accomplished though one-way evangelization (Haffke, et al., 2016);
rather, we characterize these efforts as *sensegiving*, and offer a detailed analysis of their subtle, but insisting communicative actions in order to gain influence. We find, in line with previous research (Horlacher, et al., 2016) that the CDOs contribution as sensegivers rests on their ability to value and balance the voices and perspectives of various organizational stakeholders.

6. CONCLUSION

Our study was motivated by the following research question: *How do CDOs understand and manage the tensions of digital transformation?* Through conducting and carefully analyzing interviews with 20 CDOs, we have identified five categories of tensions, seen through the eyes of the CDOs. Furthermore, we have discussed several practices CDOs undertake in order to manage these tensions. We have found that many of the CDOs perceptions are about *sensemaking* and that CDOs primarily take a discursive approach to managing the tensions, which we discuss under the term *sensegiving*. Through this approach, CDOs seek to give meaning to the purpose and content of the transformation, and to ensure the intraorganizational collaboration the digital transformation necessitates.

The CDOs interviewed in this study represent many voices. Not all the CDOs experienced the same tensions, nor applied the same strategies for managing these. We do not pretend that our list of tensions is exclusive; we have focused on tensions where our findings demonstrated the role of CDOs in managing these.

We have not had the chance to follow the CDOs over time. At the time when we conducted the interviews, many of the organizations were early in the transformation process. We cannot exclude that the tensions identified here might be less – or more – prominent at later stages, nor that other tensions might surface later in the process. An important avenue for further research would be to investigate the role of CDOs as it unfolds throughout the transformation process, and which results the CDOs actually achieve.

As the study is based on interviews with CDOs, we have seen organizational tensions and the contribution of the CDOs through the eyes of the CDOs themselves, and thus limited the point of view to one organizational role. A future study where the research method would include direct observations of organizational interaction might provide an even more in-depth understanding of the discourse and practices contributing to managing the tensions of the digital transformation.
REFERENCES


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